West Sacramento Levee Improvements Program

408 Permission Environmental Impact Statement/Environmental Impact Report

DRAFT–May 2010



U.S. Army Corps of Engineers

West Sacramento Area Flood Control Agency



DRAFT

WEST SACRAMENTO LEVEE IMPROVEMENTS PROGRAM 408 PERMISSION ENVIRONMENTAL IMPACT STATEMENT/ ENVIRONMENTAL IMPACT REPORT

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Executive Summary

Approach to the Executive Summary

This executive summary is intended to provide a concise overview of the EIS/EIR for at-a-glance convenience. As such, EIS/EIR content is used verbatim to the maximum extent possible. The heading structure and titles are consistent between the executive summary and EIS/EIR to facilitate easy reference to EIS/EIR sections. The executive summary contents are limited to Chapter 1 (Introduction), Chapter 2 (Alternatives), and a table of environmental effects.

Chapter ES.1 Introduction

The West Sacramento Area Flood Control Agency (WSAFCA) is proposing the West Sacramento Levee Improvements Program (WSLIP or the program) to improve the levees in Yolo and Solano Counties that protect the city of West Sacramento.

To protect human health and safety and prevent adverse effects on property and its economy, the City of West Sacramento (City), as part of WSAFCA, and in partnership with the California Department of Water Resources (DWR), embarked on a comprehensive evaluation of the condition of the levees protecting the city in 2006 (HDR, Inc. 2008). The results of the comprehensive evaluation revealed several deficiencies that require substantial improvements to meet current flood protection standards.

To implement the proposed improvements, WSAFCA is requesting permission from the U.S. Army Corps of Engineers (USACE) pursuant to Section 14 of the Rivers and Harbors Act of 1899 (Title 33 of the United States Code [USC], Section 408, [33 USC 408]), hereinafter referred to as Section 408, for the alteration of the Federal flood control project; authority under Section 404 of the Federal Clean Water Act (CWA) (33 USC 1344) for the placement of fill or dredged material into jurisdictional waters of the United States; and authority under Section 10 of the Rivers and Harbors Act (33 USC 403) where work would be performed in, under, or over navigable waters.

ES.1.1 Document Purpose and Structure

ES.1.1.1 Document Overview

This document is a joint program and project Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and is intended to satisfy the requirements of NEPA and the California Environmental Quality Act (CEQA) for disclosing environmental effects and recommended mitigation measures related to a proposed action and alternatives prior to making a decision on project approval. A "joint" EIS/EIR means that the NEPA lead agency (USACE) and the CEQA lead agency (WSAFCA) are each making a decision on a proposed action and have agreed to analyze the effects of that action in the same environmental document.

USACE is the lead agency preparing this EIS for the purposes of compliance with NEPA. USACE has determined that its involvement in the WSLIP, including its authority over alterations to Federal project levees, requires compliance with NEPA and preparation of an EIS.

WSAFCA is the lead agency preparing this EIR for the purposes of compliance with CEQA. WSAFCA is a Joint Powers Authority created in 1994 through a Joint Exercise of Powers Agreement by the City, Reclamation District 900 (RD 900), and Reclamation District 537 (RD 537).

ES.1.1.2 NEPA and CEQA Requirements

This document is a combined program and project EIS/EIR. The WSLIP is a program of levee improvements that will be implemented over 10 to 15 years, perhaps longer, with reach- or deficiency-specific components that are proposed for implementation in the short term (as soon as 2011). A program EIS/EIR analyzes the broad environmental effects of a program with the acknowledgment that more detailed analysis may be required for components of the program when those components are proposed for implementation and greater specificity is known. Program review provides a forum for discussing combined and cumulative effects of individual projects (projects both internal and external to the program), thereby avoiding segmentation. Two of the WSLIP components are proposed for construction as soon as 2011, and details are sufficiently developed to enable a site-specific environmental analysis at a level of detail sufficient for USACE and WSAFCA to support a decision of approval. Therefore, the program and project analyses are being combined into one document to communicate the program and project context in a transparent manner, disclose available information, and facilitate efficient analysis and review.

USACE and WSAFCA have determined that this joint EIS/EIR is the most appropriate means to comply with both NEPA and CEQA because of the need to coordinate among Federal and state agencies, and the need to complete environmental review as expeditiously as possible.

As described in 1.6.1.1.2, USACE is preparing a West Sacramento General Reevaluation Report (GRR). As the GRR is not scheduled for completion until 2012 to in turn allow improvements in successive years, the WSLIP is being advanced by WSAFCA to facilitate early implementation projects (EIPs) (described in 1.5) to more immediately address flood risk before the GRR is complete. The WSLIP program evaluation and EIPs are intended to be consistent and compatible with the final West Sacramento GRR. Except for EIPs constructed in advance of the GRR, the WSLIP improvements will be substantially implemented through the GRR once in place. The GRR will include NEPA review via an EIS independent of this WSLIP EIS/EIR; however, the documents are being coordinated for consistency and efficiency.

ES.1.1.3 Application of NEPA and CEQA Principles and Terminology

For this environmental evaluation, the more rigorous of the two laws was applied in cases in which NEPA and CEQA differ. In some cases in this document, both NEPA and CEQA terminology are used, as in Chapter 1 where the project purpose and need and project objectives are discussed. The terms *environmental consequences, environmental impacts,* and *environmental effects* are considered synonymous in this analysis, and *effects* is used for consistency.

Technical terms used in the EIS/EIR are typically defined in their first instance of use in the text. A list of acronyms and abbreviations follows the Table of Contents. An index follows Chapter 10.

ES.1.1.4 Document Organization

The document contains an introductory chapter, including the purpose and need, an alternatives chapter, chapters on program- and project-level analyses, and supporting documents.

ES.1.1.5 Resource Analysis Structure

The resource sections in Chapter 3 contain the affected environment and environmental consequences analysis (outlined in detail below) at the program level. Chapters 4 and 5 contain the project-level analysis.

- Introduction
  - Sources of Information
- Affected Environment
  - Regulatory Setting
  - Environmental Setting
- Environmental Consequences
  - Assessment Methods.
  - Determination of Effects
  - Effects and Mitigation Measures

Table ES-1 provides a key for relating the effect findings by relative severity (increasing in degree of adversity to the environment).

Table ES-1. Key to Effect Findings (by increasing adversity)

Finding
Beneficial
No Effect
Less than Significant
Significant
Significant and Unavoidable

ES.1.2 WSLIP Regional Setting and Study Area

The regional setting of the WSLIP is the Sacramento River Flood Control Project (SRFCP), beginning as far north as Redding, California, and extending south to the Sacramento–San Joaquin River Delta (Delta) (Figure 1-1). For the analysis of effects (direct, indirect, or cumulative), the regional context of the SRFCP is taken into consideration.

The WSLIP study area refers to the area that would be protected by the proposed levee improvements, including the city of West Sacramento itself and the lands within WSAFCA's boundaries, which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (DWSC). The flood protection system

associated with these waterways consists of over 50 miles of levees in RD 900, RD 537, DWR's Maintenance Area 4, and the DWSC (Figure 1-2). These levees completely surround the city with the exception of intersecting waterways. For the purposes of this program, the levees surrounding the city have been divided into nine subreaches, as shown on Figure 1-2. These reaches are described in detail in Section 1.2.1, WSLIP Study Reaches and Potential Construction Footprint.

The city of West Sacramento is located in eastern Yolo County at the confluence of the American and Sacramento Rivers. The city lies within the natural floodplain of the Sacramento River, which bounds the city along the east. It is made up of reclaimed land protected from floods by levees and the Yolo and Sacramento Bypass systems. These bypasses divert floodflows around the city to the west. In addition to the area within the city limits (in Yolo County), the study area partially extends into Solano County on the extreme southwestern edge along the DWSC. Therefore, resources in Solano County have the potential to be affected by the WSLIP and these effects are described on a resource-specific basis.

The DWSC and barge canal bisect the city into two subbasins, separating the developing Southport area from the more established neighborhoods of Broderick and Bryte to the north (City of West Sacramento 2000). The DWSC provides a navigable passageway for commercial shipping to reach the Port of West Sacramento (formerly Port of Sacramento) from the Pacific Ocean via the San Francisco Bay, Delta, and connecting waterways.

The area that would be protected by the WSLIP—the city of West Sacramento—is the downstream-most metropolitan area within the SRFCP, along with the city of Sacramento across the Sacramento River on the left bank. *Note: All levees, reaches, and landmarks are referred to using river navigation terminology. Left bank and right bank refer to locations when facing downstream in the direction of flow.* The downstream location of the study area is important relative to other flood risk reduction projects occurring upstream within the SRFCP, namely, the American River Common Features Project, Natomas Levee Improvement Program, projects undertaken by the Three Rivers Levee Improvement Authority, the Sutter Basin Project, and the Yuba Basin Project (Figure 1-3). These and other projects are described under Section 1.6, Related Actions, Programs, and Planning Efforts.

The potential construction footprint is shown in Figure 1-4.

ES.1.3 Levee Problems and Flood Management Deficiencies

ES.1.3.1 Overview of Levee Failure Mechanisms and Deficiencies

The City engaged a consultant engineering team, led by HDR, Inc., to prepare a problem identification report to determine the type, location, and severity of deficiencies in the WSAFCA flood management system. In simple terms, floods typically occur from levee failure mechanisms and deficiencies such as when:

- water overtops a levee (inadequate levee height);
- water moves through the levee structure (through-seepage);
- water moves under the levee structure (under-seepage);

- levees slopes are overly steepened or levees have inadequate substance to resist floodwaters or other forces (slope stability and geometry);
- water carries soil away from the levee slope (erosion); and
- vegetation and other encroachments, such as structures, impede levee operations and maintenance (non-compliant vegetation and levee encroachments).

These failure mechanisms and deficiencies are summarized below for each of the nine reaches in the study area (Table ES-2). Figure 1-14 illustrates the typical deficiencies.

Table ES-2. Summary of Levee Deficiencies by Reach

Study Reach	Inadequate Levee Height	Through-Seepage	Under-Seepage	Slope Stability and Geometry	Erosion	Non-Compliant Vegetation
Sacramento River North Levee	✓	✓	✓	✓	✓	✓
Sacramento River South Levee	✓		✓	✓	✓	✓
Port North Levee	✓			✓		✓
Port South Levee	✓		✓	✓		✓
South Cross Levee	✓	✓	✓	✓		✓
DWSC East Levee		✓	✓	✓	✓	
DWSC West Levee	✓	✓	✓		✓	✓
Yolo Bypass Levee	✓	✓	✓	✓	✓	✓
Sacramento Bypass Levee		✓	✓	✓		

ES.1.4 WSLIP Purpose and Need

ES.1.4.1 Purpose, Approach, and Objectives

The purpose of the WSLIP is to achieve a minimum of 200-year flood protection for the entire city by improving the approximately 50 miles of levees protecting West Sacramento. A 200-year flood is a flood that has a 0.5% chance of occurring in any given year, or annual exceedance probability (AEP).

The approach to meet this purpose is to provide a comprehensive evaluation of the entire levee system that protects the city, develop recommended strategies for improvement, and provide a basis for partnerships with Federal and state agencies to implement improvements that meet the flood protection and compatible recreation and open space goals. The objectives under this purpose and approach are to:

- construct levee improvements as soon as possible to reduce flood risk as quickly as possible;
- construct improvements that are politically, socially, economically, and environmentally acceptable;
- provide recreation and open space elements for the city that are compatible with flood improvement actions; and
- ensure continuing Federal assistance for levee repairs and maintenance.

ES.1.4.2 Need for Action

Five needs have been identified for the WSLIP.

- Study results from the comprehensive levee evaluation have shown that the levees protecting the city need improvements to reduce the current level of risk to human health and safety, property, and the adverse economic effect that serious flooding would cause.
- Study results further have shown that the levees in WSAFCA's area are deficient when compared against current Federal standards. Action is needed to bring them up to current standards in order to maintain eligibility for Federal emergency management assistance. Those improvements are necessary to meet FEMA's minimum acceptable level of flood protection (commonly referred to as the 100-year flood) as specified by the National Flood Insurance Program (NFIP). (HDR, Inc. 2008.)
- As required by Senate Bill (SB) 5 (signed by Governor Schwarzenegger in October 2007), the Central Valley Flood Protection Board (CVFPB) must adopt a Central Valley Flood Protection Plan (CVFPP) by July 1, 2012. The CVFPP will require a 200-year level of flood protection for urban areas by the year 2025. Levee improvements are necessary to meet that requirement.
- As a growing community, the City has recreation and open space needs and goals that are unmet. Surrounding waterways represent not only an element of flood risk but also great opportunity for water-based recreation and public open space. Flood protection improvement elements typically underlie or are adjacent to proposed recreation elements that are part of the City's planning documents. There is a need to provide West Sacramento residents with recreation elements that are compatible with flood protection improvements.
- As described in Section 1.2, WSAFCA's area is the downstream-most metropolitan area in the SRFCP. As other projects have been implemented or improvements are being planned to reduce risk and increase flood protection for upstream communities, there is concern that the performance of the SRFCP needs to be evaluated comprehensively to ensure that the individual projects are kept in balance, that effects among the projects are being evaluated, and that risk is not being transferred between communities. The WSLIP represents an important subarea of the SRFCP and merits such study, heightened by West Sacramento's downstream location.

To further demonstrate the need for action, details about West Sacramento's flood risk and the consequences of levee failure in West Sacramento are described in the Alternatives chapter (2.4.2.2, Consequences of Levee Failure). Additional context for the objectives of, purpose of, and need for the WSLIP can be found in Chapter 1.

ES.1.5 WSLIP Background

ES.1.5.1 Regional Flood Management History

The SRFCP was authorized by Congress in 1917. The SRFCP was the major project for flood control on the Sacramento River and its tributaries (Figure 1-1). It was sponsored locally by The Reclamation Board of the State of California (Reclamation Board, reauthorized in 2007 as the Central Valley Flood Protection Board [CVFPB]) and was the first Federal flood control project constructed outside the Mississippi River Valley. Currently, there are several major flood risk

reduction projects being planned or implemented within the SRFCP area (Figure 1-3). Projects relevant to the WSLIP are discussed in further detail under Section 1.6, Related Actions, Programs, and Planning Efforts, below.

Prior to European settlement in the mid-19th century, the floodplain of the Sacramento River in the 150 miles between the city of Redding and the Delta varied from 2 to 30 miles wide and annually covered more than 1 million acres. Low, discontinuous levees were built by individual landowners from the 1840s to the 1890s. Those levees concentrated floodflows and contributed to problems that were worsened by upstream hydraulic mining in the Sierra Nevada foothills in the late 1800s. With the authorization of the SRFCP, USACE and the State of California began managing the project as a "regional system," constructing improvements to approximately 1,100 miles of levees and creating bypasses and floodways.

Although the flood control structures have been extensively improved and upgraded since construction, the underlying foundation of most of the levees and channels pre-dates any state or USACE involvement and still retains the original materials that include dredged riverbed sands, soil, and organic matter. At the time of the SRFCP authorization in 1917, the areas being protected by the levees were primarily agricultural with minimal improved infrastructure such as railroads and highways. Many of these areas are now heavily urbanized and densely populated, including the city of West Sacramento.

The Federal government maintains oversight but has no ownership of or maintenance responsibilities for the Federal levee system, except for few select features that continue to be owned and operated by USACE. Considering these exceptions, the great majority of levees, channels, and related flood control structures are owned, operated, and maintained by local levee and reclamation districts (at the county and sub-county level) and the State of California. Most of the levee and reclamation districts existed prior to the SRFCP authorization in 1917 and have been carrying out maintenance responsibilities. Today, however, most of the levee districts are substantially underfunded and unable to maintain the system to meet current Federal standards. The Federal government can participate in improvements to the Federal levee system in partnership with a local sponsor (the state and/or levee and reclamation districts). The levees surrounding the city are maintained by RDs 537 and 900 and DWR's Maintenance Area 4.

In recent decades, a number of evaluations of levee conditions, as well as repair and reconstruction efforts, have occurred. Some have been in specific response to damage resulting from particular flood events; others have been in response to general levee deterioration over time and deferred maintenance.

In 1986, 1995, and 1997, there were record flood stages in the Sacramento region. As a result, USACE evaluated the level of flood protection in the study area with updated hydrology and levee analysis. It was determined that the risk of flooding from the Sacramento River and its tributaries ranges from 1 in 25 (25-year) to more than 1 in 100 (100-year) each year (or 4% to 1% probability), depending on the location.

ES.1.5.2 Local Flood Management History

Consistent with much of the Sacramento Valley as described above, the levees protecting West Sacramento were initially constructed in the 1840s to 1890s. They later became part of the SRFCP authorized by Congress in 1917. These levees have been strengthened and maintained through

several subsequent projects in partnership between USACE, the State of California, the City, and the agencies that maintain the levees.

Recent milestones in the flood management context of West Sacramento include the following activities.

- In 1992, the USACE concluded that the levees along the Sacramento River and Yolo Bypass did not provide protection from a 100-year flood event.
- In 1993, a flood control project was completed as part of the Sacramento Urban Area Levee Reconstruction Project. This project placed a stability berm and related features to address through-seepage along the entire length of the Sacramento River levee bordering the Southport area (referred to in the WSLIP study area as the Sacramento River South Levee).
- In 1994, the City and reclamation districts formed a Joint Powers Authority, WSAFCA, to coordinate, fund, and construct major flood protection improvements that were beyond the means of the individual entities (City of West Sacramento 2000).
- In 1995, WSAFCA formed an assessment district to fund the local cost share for the West Sacramento Project. This project was part of the Federal Sacramento Metropolitan Area Project authorized by the Water Resources Development Act of 1996 (WRDA), as described above. The WSAFCA assessment funded geotechnical and engineering investigations of the Sacramento River levees and the southern boundary cross levee in the Southport area (PB 2007). The West Sacramento Project was designed to provide the city with a greater than 200-year level of protection.
- During the 1997 record flood stage event, the levees surrounding the city sustained minor damage. As design work was nearing completion on the West Sacramento Project, under-seepage was noted along the Sacramento Bypass levee.
- In 1998, stability issues became apparent along a levee maintained by RD 537 just north of the Southern Pacific Railroad tracks.
- In 2002, the West Sacramento Project was substantially completed. This project involved raising more than 1 mile of the south levee of the Sacramento Bypass by up to 5 feet and raising 4.5 miles of the Yolo Bypass levee by up to 5.5 feet.
- As described above, in May 2007, property owners in West Sacramento approved a new annual parcel assessment to provide funding for flood improvements, facilitating the WSLIP study.
- In 2008, WSAFCA completed an EIP known as the I Street Bridge EIP. This EIP improved a critical section of levee in the redevelopment area along the riverfront of the city to reduce flood risk to public safety, private property, and public infrastructure. The EIP improved a 475-linear-foot reach of the Sacramento River North Levee of the WSLIP study area to address the problems of through- and under-seepage. This EIP and Section 408 action was expeditiously completed by WSAFCA, the State of California, and USACE.

ES.1.5.3 Local Recreation Needs

The City, as a member agency of WSAFCA, is proposing recreation elements that are compatible with flood improvements to meet recreation needs. For example, the Sacramento River is central to the identity and image of the city, yet opportunities to enjoy it are hampered by lack of safe and accessible public access points. The city is also lacking developed facilities and infrastructure for

dedicated off-street bikeways, environmental interpretation and education, fishing, boating, hiking, and other active and passive outdoor recreation experiences. This situation has been heightened by the recent growth of the local population, demographically influenced by young families and individuals oriented toward outdoor recreation.

The *City of West Sacramento Parks Master Plan* (Parks Master Plan) from 2003 identified several key recreation opportunities for the city that will enable its citizens and visitors to enjoy the resources provided by the Sacramento River and other waterways. The recreation needs relative to the WSLIP are summarized below.

- **Improved water access.** Residents value the water resources available in West Sacramento. They desire improved access to water-related recreation such as fishing, boating, swimming, and passive use (e.g., wildlife viewing and hiking).
- **Recreation corridors and trails.** The residents support corridors for bicycling, walking, and horseback riding.

ES.1.6 Related Actions, Programs, and Planning Efforts

This section lists other flood management activities that comprise the regional planning context for the WSLIP.

- Sacramento Metropolitan Area, California, Feasibility Report (West Sacramento Project)
- West Sacramento General Re-Evaluation Report
- Sacramento River Deep Water Ship Channel Project
- Sacramento Weir Sediment Removal Project
- Central Valley Flood Protection Act
- Natomas Levee Improvements Program
- Sacramento River Flood Control System Evaluation
- Sacramento–San Joaquin Rivers Comprehensive Study
- American River Common Features Project
- Sacramento River Bank Protection Project
- Flood Control and Coastal Storm Emergency Act

ES.1.7 Community Outreach, Agency Coordination, and Issues of Known Controversy

ES.1.7.1 Community Outreach

USACE and WSAFCA have established a proactive multi-media outreach program to communicate the WSLIP. The approach to the outreach program has been to go beyond the guidelines and

requirements of NEPA and CEQA for public noticing to ensure the affected community and other interested stakeholders are informed, engaged, and involved through an accessible, open, and transparent process. Thus far, the outreach program has included more than a dozen actions, including meetings, publications, web-postings, and other community involvement activities.

To date, the results of the outreach program have been very favorable, constructive, and supportive for the WSLIP. The tone and substance of the input has been consistent with the very favorable response for the voter-approved assessment to fund the local share of the WSLIP. Comments received from the public have been considered to refine the project description and the environmental analysis.

A more detailed accounting of the scoping process is provided in Appendix A.

ES.1.7.2 Agency Consultation and Coordination

The WSLIP has been planned in coordination and cooperation with numerous local, state, and Federal agencies. In Chapter 3, the Regulatory Setting for each respective resource describes the compliance with applicable Federal, state, regional and local laws and regulations, including consultation to date with various agencies, such as U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (DFG), as well as Native Americans.

This EIS/EIR will be used by Responsible and Trustee Agencies to determine the effects of the proposed action.

ES.1.7.3 Issues of Known or Expected Controversy

NEPA requires that project proponents identify issues of known controversy that have been raised in the scoping process and throughout the development of the project. Thus far, no substantial issues have been discovered through public feedback. However, the following potentially controversial issues are anticipated to arise in the conduct of the environmental analysis process.

- Construction-Related Effects
- Property Take and Restricted Property Access
- Restriction of Vegetation on Levees
- Climate Change and Sea-Level Rise

Chapter ES.2
Alternatives

ES.2.1 Introduction

Chapter 2 describes the following elements:

- general information about improvements, including the screening process;

- WSLIP program description for flood and recreation improvements;
- project-level description for two EIPs: CHP Academy EIP and The Rivers EIP; and
- environmental commitments incorporated into the program and project description to be considered in the environmental analysis for all action alternatives.

ES.2.2 General Information about Alternatives

ES.2.2.1 Approach to Alternatives

NEPA and CEQA generally require that an EIS and EIR (respectively) consider a range of alternatives that would attain most of the basic project purpose, need, and objectives while avoiding or substantially lessening project effects..

Consistent with NEPA standards, alternatives at the program level are analyzed on an equal, non-preferential basis (i.e., there is no proposed project/preferred alternative) and at an equal level of detail. As required under NEPA and CEQA, a no-action (no-project) alternative has been included to allow comparison of impacts of a range of alternatives including no project implementation.

The alternatives for the program have been developed on a reach-by-reach basis, rather than basin-wide. The alternative levee treatments are not bundled or packaged but rather are evaluated independently at the program level, allowing for flexible combinability at the project level. In describing and analyzing the WSLIP at the program level, the individual flood and recreation improvements function as alternatives for the purposes of this EIS/EIR. In describing and analyzing the EIPs under the WSLIP at the project level, flood and recreation improvements have been packaged into at least two project alternatives for the purposes of this EIS/EIR.

ES.2.2.2 Alternative Screening Process

The alternative screening process includes a pre-program screen, program-level screen, and project-level screen.

ES.2.2.2.1 Pre-Program Screen

Prior to analysis in the EIS/EIR, certain improvements were screened out based on the following criteria:

- geography and jurisdictional authority, and
- ability to meet purpose and objectives.

ES.2.2.2.2 Program-Level Screen

Improvements that passed the pre-program screen are evaluated uniformly against a set of criteria and compared to one another and no action at the program level. The environmental analysis in this EIS/EIR is part of the program-level screen, combined with other planning, engineering, and financial factors, likely to include the following elements:

- ability to address the flood management problem or levee deficiency;

- avoidance, minimization, and mitigation of environmental effects;
- land use compatibility;
- integration of multi-purpose objectives, such as delivery of recreation features that are compatible with flood improvements;
- cost; and
- public feedback, including that discovered during the EIS/EIR process.

ES.2.2.2.3 Project-Level Screen

Beyond the program level, screening criteria are applied to identify reach-specific improvements. While the final criteria are subject to change as the WSLIP develops and the process unfolds, the criteria are likely to include the following elements:

- ability to meet the project objectives (i.e., address the deficiencies) to reduce risk;
- availability of funds;
- scalability of construction;
- real estate requirements;
- land use compatibility;
- permit requirements;
- environmental constraints;
- integration of multi-purpose objectives, such as delivery of recreation features that are compatible with flood improvements;
- evolving technical policy; and
- public feedback, including that discovered during the EIS/EIR process.

ES.2.3 Program-Level Alternatives Considered but Not Carried Forward

Several alternatives to the WSLIP were considered but not carried forward based on the pre-program screening criteria presented in Section 2.2.2.1. These alternatives are listed below.

- Reoperation of Upstream Reservoirs
- Reoperation of Weirs
- Development of Additional Upstream Storage
- Raising Building Pads
- DWSC Closure Structure and Gated Weir

ES.2.4 No Action Alternative

ES.2.4.1 Introduction to No Action

The No Action Alternative serves as a benchmark against which the effects and benefits of the action alternatives are evaluated. The No Action Alternative consists of continuation of current conditions and operation and maintenance practices that reasonably would be expected to occur in the foreseeable future if the WSLIP were not implemented based on current plans and consistent with available infrastructure and community services.

ES.2.4.2 No Flood Improvements Implemented under the No Action Alternative

Under the No Action Alternative, WSAFCA would not implement flood improvements. The levees protecting the city would continue to require improvements to meet FEMA's minimum acceptable level of flood protection. In addition, the associated risk to human health and safety, property, and the adverse economic impact that serious flooding could cause would continue, and the risk of a catastrophic flood would remain high.

ES.2.4.2.1 Consequences of Levee Failure

Assuming that no levee repair or strengthening would occur under the No Action Alternative means that the West Sacramento levee system would remain or become more susceptible to failure as a result of identified deficiencies such as seepage, erosion, inadequate levee height, and slope instability. These conditions could cause portions of the levee system to fail, triggering widespread flooding, extensive damage to the city's existing residential, commercial, agricultural, and industrial structures, and potential loss of life and property. Extensive damage to utilities, roadways, major interstate transportation corridors, and other infrastructure systems would also likely occur.

Flood depth maps prepared for West Sacramento indicate that under a 100-year flood event scenario, inundation levels would range from 1 foot to 15 feet, depending on the local elevation of the land surface. Figure 2-1 shows the ultimate estimated inundation depths for a 100-year flood event.

In 2006, two hypothetical levee failures were analyzed for West Sacramento utilizing 100-year water surface elevations and hydrology. This analysis was performed to assist the City in its flood emergency preparedness planning. One failure was located in the northern part of the city, on the Sacramento River North Levee, and the other was located in the Southport area, on the Sacramento River South Levee (failure locations are shown in Figures 2-2 and 2-3). (Wood Rodgers 2006.)

The analysis indicates that a levee failure on the Sacramento River North Levee during a 100-year event would flood the entire north area with at least 1foot of water within 24 hours, at which point vehicular evacuation would become impossible (a depth of 1 foot is regarded as impassable from the standpoint of vehicular traffic). Certain neighborhoods close to the levee failure would lose access to evacuation routes within three hours of levee failure. Figure 2-2 shows the estimated time to 1-foot inundation depths throughout the northern area. Within3 days, floodwater depths would reach 3to 10 feet, depending on land surface elevation (as shown in Figure 2-1). Floodwaters would flow from north to south, seeking the lowest topographical elevation, and eventually discharge into the DWSC.

The study estimates that floodwaters would begin to spill into the DWSC less than 24 hours after the breach. Modeling indicates that the DWSC could absorb up to 20,000 cubic feet per second (cfs) in discharge flow from waters flooding the north area of the city before overtopping and flooding the Southport area. (Wood Rodgers 2006.)

A levee failure on the Sacramento River South Levee during a 100-year event would flood the entire Southport area with at least 1 foot of water within 24 hours. Jefferson Boulevard, the only vehicular evacuation route for Southport, would be inundated by 1 foot of water within 4 hours, making it impassable. Figure 2-3 shows the estimated time to 1-foot inundation depths throughout the Southport area. Inundation depth could reach 3 feet in 36 hours and 10 feet after three days (Figure 2-1). Floodwaters would flow from east to west, then turn south, collecting at the South Cross Levee. The maximum stage from the floodwater was estimated at elevation 22 feet. The elevation at the top of the South Cross Levee is 21.5 feet. If the South Cross Levee were overtopped, further flooding would occur downstream of the city of West Sacramento. (Wood Rodgers 2006.)

Levee failure and subsequent flooding of the city of West Sacramento would affect the entire city, jeopardizing lives, and would cause substantial damage to structures, contents, and other property such as landscaping and automobiles. As of 2005, a population of 40,439 was living in 15,448 housing units within the city (Sacramento Area Council of Governments 2008a and 2008b). All of these residents could be displaced by a catastrophic flood event. Additionally, the city is home to 30,655 jobs (Sacramento Area Council of Governments 2008c), 734 commercial and industrial structures, 46 public structures and 27 park facilities, which would all be affected by a flood event (HDR, 2009). Environmental and agricultural resources could also sustain major damage in a flood event; 22.6% of the land area within the city is either farmland or open space (City of West Sacramento 2009). If a catastrophic flood event occurred resulting in inundation up to 15 feet, land damages are estimated to be $237,763,648 and structural damages could be up to $1,750 ,118,102 (PB 2007). These values are based on the 100-year event.

A flood event in West Sacramento would also disrupt state and interstate highway, rail, and shipping traffic, causing long-term effects on the region's and the state's economy and ability to move people and goods. West Sacramento has one of the most comprehensive transportation networks on the west coast. Its central geographic location and extensive north-south and east-west highway access has made it a major distribution center. High volumes of truck and passenger traffic pass through the city on Interstate 80 and US-50/Business 80 every day, with truck traffic transporting approximately $63 billion worth of cargo annually through West Sacramento (HDR Engineering 2009). Major transcontinental rail lines passing through the city provide commercial and passenger rail service to all parts of the nation, and the Port of West Sacramento runs domestic and international shipping services (City of West Sacramento 2009). Approximately 9.3 million tons of rail freight valued at approximately $5 billion travels through West Sacramento annually (HDR Engineering 2009). Flooding of this transportation and distribution infrastructure would cut off major statewide and interstate transportation corridors.

ES.2.4.2.2 Future State or Federal Action

Despite the likelihood of state- or Federal-led implementation of repairs, for the purpose of evaluating impacts under the No Action Alternative, the EIS/EIR assumes that the improvements would not occur. Again, as stated above, the No Action Alternative therefore assumes no levee repair or strengthening would be implemented, the purpose and objectives would not be met, and flood risk would continue.

ES.2.4.3 Relationship of Flood Map Modernization to No Action

FEMA is in the process of reevaluating the level of flood protection provided by the levee system protecting the city. The city is currently designated as falling under Zone X, meaning it has less than a 1% chance of flooding in any given year (100-year flood protection). If the city were remapped out of Zone X and into an A, AE, AR, or A-99 Zone, flood insurance would become mandatory for all citizens and businesses that hold federally guaranteed mortgage loans. In addition, Federal and state regulations would prevent or constrain further development in the city, which may further delay levee improvement funding because a flood improvement development fee is incurred for new development.

A change in the flood hazard designation for West Sacramento would interrupt the preferred regional "blueprint" for future growth through 2035 adopted by the Sacramento Area Council of Governments (SACOG) and Valley Vision in 2004. With a change in flood hazard designation, 40,000 new dwelling units and the commercial and industrial developments associated with 50,000 new jobs would need to be redirected to other areas in the region over the next four decades (Sacramento Area Council of Governments 2004).

ES.2.4.4 Levee Vegetation Policy and No Action

While the USACE review and approval process under Section 408 (which this EIS/EIR is part of) is one mechanism for review of WSAFCA's levees relative to recent USACE policy guidance for vegetation on levees, the No Action Alternative would be the same as the WSLIP, meaning the future condition is removal of non-compliant vegetation in any case. At this time no variance is in place and this EIS/EIR analysis assumes no variance would be in place under the No Action Alternative.

ES.2.4.5 Recreation under No Action

The No Action Alternative would also delay implementing elements of the Parks Master Plan, Bicycle and Pedestrian Path Master Plan, and the Sacramento Riverfront Master Plan (SRMP).

ES.2.5 Program-Level Alternatives for Levee and Flood Management Deficiencies

For each deficiency described in Chapter 1, a number of improvements or combination of improvements can be used to attain the level of flood protection desired, summarized in Table ES-3.

Table ES-3. Summary of Levee Improvements and Deficiencies

		Deficiency					
Group	Improvement	Inadequate Levee Height	Through-Seepage	Under-Seepage	Slope Stability and Geometry	Erosion	Non-Compliant Vegetation
Levee Height	Flood wall	✓					
	Levee raise (in place)	✓					
	Levee raise (adjacent)	✓	✓		✓	✓	✓
	Levee raise (full)	✓	✓		✓		
	Closure structure	✓					
Seepage Control	Interior drain		✓				
	Jet grouting		✓	✓			
	Relief wells			✓			
	Seepage berm		✓	✓			
	Sheet pile wall		✓	✓			
	Slurry cutoff wall		✓	✓			
Slope Stability/ Geometry	Slope flattening		✓		✓		
	Stability berm		✓		✓		
Erosion Control	Rock slope protection				✓	✓	
Other	Setback levee	✓	✓		✓	✓	✓
	Vegetation removal						✓

ES.2.6 Program-Level Alternatives for Recreation

The City, as a member agency of WSAFCA, is proposing recreation and non-motorized transport improvements that are compatible with flood improvement actions to meet recreation needs. These improvements are listed below.

- Trails
- Riverside Parks
- Developed Water Access
- Special Projects

ES.2.7 Summary of Program Improvements by Reach

Based and building on the information presented earlier in this chapter, Table ES-4 summarizes the potential flood and recreation improvements on a reach-by-reach basis.

Table ES-4. Summary of Program Improvements by Reach

		Reach								
Improvement Group	Improvement	Sacramento River North Levee	Sacramento River South Levee	Port North Levee	Port South Levee	South Cross Levee	DWSC West Levee	DWSC East Levee	Yolo Bypass Levee	Sacramento Bypass Levee
Flood : Levee Height	Flood wall			✓	✓		✓			
	Levee raise (in place)	✓	✓		✓		✓	✓		
	Levee raise (adjacent)	✓	✓		✓	✓	✓	✓		
	Levee raise (full)	✓	✓		✓		✓	✓		
	Closure structure	✓		✓	✓				✓	
Flood: Seepage Control	Interior drain					✓				
	Jet grouting	✓								
	Relief wells	✓	✓					✓		✓
	Seepage berm					✓				✓
	Sheet pile wall	✓					✓	✓	✓	
	Slurry cutoff wall	✓	✓		✓	✓	✓	✓	✓	✓
Flood: Slope Stability/ Geometry	Slope flattening	✓	✓		✓	✓		✓		✓
	Stability berm		✓						✓	✓
Flood: Erosion Control	Rock slope protection	✓	✓				✓	✓		
Flood: Other	Setback levee		✓							
	Vegetation removal	✓	✓	✓	✓					
Recreation	Trails	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Riverside parks	✓	✓	✓	✓			✓		
	Developed water access	✓		✓	✓			✓		
	Special projects	✓								

ES.2.8 Project-Level Alternatives

ES.2.8.1 Introduction and Project Phasing

Two EIPs are being analyzed in a parallel process with the WSLIP to address critical areas where the levee deficiency is well-defined and the most suitable treatments are known, applying the project-level criteria presented earlier in this chapter.

At this time, WSAFCA is proposing the EIPs for sites on the Sacramento Bypass and Sacramento River North levee reaches, referred to as the CHP Academy EIP and The Rivers EIP, respectively. These sites have both had observed past performance issues, with evidence of seepage at both sites

(and possible boils at The Rivers). Table ES-5 provides an overview of the deficiencies and upgrades proposed at these sites for flood management. Recreation improvements also are proposed.

Table ES-5. CHP Academy and The Rivers EIP Alternatives

EIP	Program Component	Applicant Preferred Alternative	Alternative B
CHP Academy	Flood	Slurry cutoff wall and waterside slope flattening	Stability berm with interior drain, and relief wells
	Recreation	Paved bike trail, non-motorized access controls	Paved bike trail, non-motorized access controls
The Rivers	Flood	DSM cutoff wall, and landside slope flattening (landside hinge point stationary, kick out toe)	Deep sheet pile wall and landside slope flattening
	Recreation	Paved bike trail, paved pedestrian trail, paved landing, landside levee embankment ramps, interpretive signs, non-motorized access controls	Paved bike trail, paved pedestrian trail, paved landing, landside levee embankment ramps, interpretive signs, non-motorized access controls

ES.2.8.2 CHP Academy EIP

The CHP Academy EIP encompasses approximately 6,500 feet of the Sacramento Bypass Levee, (Figure 2-23). The easternmost 1,200 feet of the waterside slope of the levee (adjacent to the weir) is lined with a concrete cap. This concrete cap prevents the levee from eroding when the weir is open and water is allowed to enter into the Sacramento Bypass from the Sacramento River. A stability berm and an interior drain system installed as part of the West Sacramento Project in 1999 runs the length of the levee on the landside. Deficiencies at this site are through-seepage, geometry, and under-seepage, along with short reaches of instability.

ES.2.8.3 The Rivers EIP

The Rivers EIP area is approximately 4,500 feet long and is located on the Sacramento River North Levee, just north of the confluence of the Sacramento and American Rivers, including part of The Rivers residential development (Figure 2-24). Levee deficiencies at this site include geometry, stability, through-seepage, and under-seepage.

ES.2.9 Environmental Commitments

Environmental commitments are measures incorporated as part of the program and project description, meaning they are proposed as elements of the proposed action and are to be considered in conducting the environmental analysis and determining effects and findings. To avoid and minimize construction-related effects, WSAFCA would implement the following environmental commitments at the program and project levels to reduce or offset short-term, construction-related effects. Measures have been developed for each of the topics below, to be applied in the program- and project-level resource analyses.

- Raptors
- USACE Levee Vegetation Guidance
- Protected Trees and Riparian Trees
- Avoid and Minimize the Spread or Introduction of Invasive Plant Species
- Stormwater Pollution Prevention Plan
- Temporary Visual Barriers between Construction Zones and Residences
- Noise-Reducing Construction Practices
- Temporary Resident Relocation, Property Acquisition, and Compensation for Loss of Business
- Traffic Control and Road Maintenance Plan
- Coordination to Ensure Minimal Overlap in Disturbance to Traffic during WSLIP Construction
- Coordination of Construction Periods with Railroad Service Officials
- Coordination of Construction Periods with the Port of West Sacramento
- Coordination of Construction Periods with CHP
- Notification of Construction Area Closure
- Reconstruction of Affected Formal Park Facilities
- Preservation of Marina and Boat Launch Access
- Minimization of Construction-Related Effects on Navigation
- Approval for Broderick Boat Ramp Closure
- Bentonite Slurry Spill Contingency Plan [1]
- Spill Prevention, Control, and Counter-Measure Plan
- Implementation of Measures to Maintain Surface Water Quality and Groundwater Quality
- Monitoring of Turbidity in Adjacent Water Bodies
- Soil Supply Protection Measures

Effects Summary Table

Table ES-6 is a summary of the effects of the WSLIP, CHP Academy EIP, and The Rivers EIP. The effects that are significant and unavoidable or that are potentially significant and unavoidable, depending on site or project characteristics, are listed below.

- TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic and Potential Degradation of LOS for Roadways in the Program Vicinity

[1]Also referred to as a *frac-out plan*, which addresses the movement of mud toward the surface caused by excessive drilling pressure.

- TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee
- TN-10: Temporary Loss of Service to Railroads
- AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds
- NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related NoiseNZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration
- VEG-1: Permanent Loss of Woody Riparian Vegetation from Levee Vegetation Removal
- VEG-2: Potential Loss of Special-Status Plant Populations Caused by Habitat Loss Resulting from Program Construction
- FISH-1: Permanent Loss of Habitat, Including Shaded Riverine Aquatic Cover, for Special-Status Fish Species Resulting from Levee Vegetation Removal
- FISH-2: Loss of Habitat for Special-Status Fish Species as a Result of Construction
- WILD-1: Permanent Loss of Riparian Habitat for Special-Status Wildlife Species as a Result of Levee Vegetation Removal
- WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction
- SOC-1: Effects on Residents
- VIS-1: Affect a Scenic Vista
- VIS-2: Create a New Source of Light or Glare
- VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance
- VIS-6: Conflict with Local Visual Resource Policies
- REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor
- PUB-1: Damage of Public Utility Infrastructure and Disruption of Service
- CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes
- CR-2: Change in the Significance of an Archaeological Resource
- CR-3: Disturbance of Native American and Historic-Period Human Remains

Table ES-6. Summary of Effects and Mitigation Measures for the WSLIP, CHP Academy EIP, and The Rivers EIP

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
FLOOD CONTROL AND GEOMORPHIC CONDITIONS			
Flood and Recreation Program Alternatives			
FC-1: Change in Water Surface Elevations and Flood Safety Attributable to Project Design (Flood Program, local and upstream)	Beneficial	N/A	N/A
FC-1: Change in Water Surface Elevations and Flood Safety Attributable to Project Design (Flood Program, downstream)	Less than significant	N/A	N/A
FC-1: Change in Water Surface Elevations and Flood Safety Attributable to Project Design (Recreation Program, local, upstream, downstream)	Less than significant	N/A	N/A
FC-2: Decrease in Risk of Levee Failure as a Result of Erosion or Seepage	Beneficial	N/A	N/A
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design	Less than significant
FC-4: Increase in Channel Bed Incision and Bank Erosion Attributable to Heightened Levees	Less than significant	N/A	N/A
FC-5: Decrease in Levee Erosion	Beneficial	N/A	N/A
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A
FC-9: Redirection of Under-Seepage	Beneficial	N/A	N/A
FC-10: Minimization of Stream Energy and Associated Floodplain Scour and/or Deposition	Beneficial	N/A	N/A
CHP Academy Applicant Preferred Alternative			
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design	Less than significant
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A
CHP Academy Alternative B			
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design	Less than significant
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A
FC-9: Redirection of Under-Seepage	Beneficial	N/A	N/A
The Rivers Applicant Preferred Alternative			
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design	Less than significant
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A
The Rivers Alternative B			
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design	Less than significant
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A
WATER QUALITY AND GROUNDWATER RESOURCES			
Flood and Recreation Program Alternatives			
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than Significant	N/A	N/A
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering	Less than significant
CHP Academy Applicant Preferred Alternative			
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	N/A
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	N/A
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering	Less than significant
CHP Academy Alternative B			
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	N/A
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	N/A
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering	Less than significant
The Rivers Applicant Preferred Alternative			
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	N/A
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	N/A
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering	Less than significant
The Rivers Alternative B			
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	N/A
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	NA	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering	Less than significant
GEOLOGY, SEISMICITY, SOILS AND MINERAL RESOURCES			
Flood and Recreation Program Alternatives			
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-2: Effects on Levee Bank Erosion	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A
GEO-5: Structural Damage and Injury Resulting from Development on Expansive Soils	Significant	GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report	Less than significant
GEO-6: Decrease in Local Soil Supply Resulting from Demand for Levee Material	Less than significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A
GEO-5: Structural Damage and Injury Resulting from Development on Expansive Soils	Significant	GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report	Less than significant
CHP Academy Alternative B			
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
GEO-5: Structural Damage and Injury Resulting from Development on Expansive Soils	Significant	GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report	Less than significant
The Rivers Applicant Preferred Alternative			
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A
The Rivers Alternative B			
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A
TRANSPORTATION AND NAVIGATION			
Flood and Recreation Program Alternatives			
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Significant	No feasible mitigation	Significant and unavoidable
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Less than significant to significant and unavoidable	N/A	Less than significant to significant and unavoidable
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
TN-7: Temporary Changes to Navigation as a Result of Construction	Less than significant	N/A	N/A
TN-8: Increased Circulation Opportunities for Cyclists and Pedestrians	Beneficial	N/A	N/A
TN-9: Effect on Boating Amenities along the Sacramento River	Beneficial	N/A	N/A
TN-10: Temporary Loss of Service to Railroads	Less than significant to significant and unavoidable	N/A	Less than significant to significant and unavoidable
CHP Academy Applicant Preferred Alternative			
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Less than significant	N/A	N/A
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes because of Temporary Road Closures	Less than significant	N/A	N/A
CHP Academy Alternative B			
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Less than significant	N/A	N/A
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Significant and unavoidable	No feasible mitigation	Significant and unavoidable
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A
The Rivers Alternative B			**N/A**
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Significant and unavoidable	No feasible mitigation	Significant and unavoidable
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A
AIR QUALITY AND CLIMATE CHANGE			
Flood and Recreation Program Alternatives			
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan if Unmitigated Emissions Exceed PM10 or PM2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions	Potentially significant and unavoidable
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A
CC-1: Increase in Greenhouse Gas Emissions during Construction	Potentially significant	CC-MM-1: Implement Measures to Minimize Greenhouse Gas Emissions during Construction	Less than significant
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emission of Greenhouse Gases	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 or PM2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions	Less than significant to significant and unavoidable
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2 Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emission of Greenhouse Gases	Less than significant	N/A	N/A
CC-3 Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A
CHP Academy Alternative B			
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 or PM2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents	Less than significant to significant and unavoidable
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emission of Greenhouse Gases	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 and PM2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions	Less than significant to significant and unavoidable
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emission of Greenhouse Gases	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A
The Rivers Alternative B			
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 and PM2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions	Less than significant to significant and unavoidable
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emission of Greenhouse Gases	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A
NOISE			
Flood and Recreation Program Alternatives			
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant to significant and unavoidable	N/A	Less than significant to significant and unavoidable
NZ-2: Exposure of Sensitive Receptors to Temporary Vibration Caused by Pile Driving	Significant	NZ-MM-1: Limit Pile-Driving Vibration and Implement a Pile-Driving Vibration Control Plan	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Significant	NZ-MM-2: Employ Noise-Reducing Emergency Operational Practices to Comply with Applicable Local Noise Ordinances Where Feasible NZ-MM-3: Design Acoustical Treatments into the Proposed Pump Station to Comply with Applicable Local Noise Standards	Less than significant
NZ-4: Compatibility of Recreation Elements with Surrounding Land Uses	Significant		Determined on a project basis
NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration	Significant	NZ-MM-4: Employ Measures to Prevent Excessive Exposure of Buildings and Structures to Groundborne Vibration	Less than significant to significant and unavoidable
CHP Academy Applicant Preferred Alternative			
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A
CHP Academy Alternative B			
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A
NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration	Significant	NZ-MM-4: Employ Measures to Prevent Exposure of Buildings and Structures to Excessive Groundborne Vibration	Significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
The Rivers Alternative B			
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-2: Exposure of Sensitive Receptors to Temporary Vibration Caused by Pile Driving	Significant	NZ-MM-1: Limit Pile-Driving Vibration and Implement a Pile-Driving Vibration Control Plan	Less than significant
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A
NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration	Significant	NZ-MM-4: Employ Measures to Prevent Exposure of Buildings and Structures to Excessive Groundborne Vibration	Significant and unavoidable
VEGETATION AND WETLANDS			
Flood and Recreation Program Alternatives			
VEG-1: Permanent Loss of Woody Riparian Vegetation from Levee Vegetation Removal	Significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat	Potentially significant and unavoidable
VEG-2: Potential Loss of Special-Status Plant Populations Caused by Habitat Loss Resulting from Program Construction	Significant	VEG-MM-2: Retain Qualified Botanists to Conduct Floristic Surveys for Special-Status Plants during Appropriate Identification Periods VEG-MM-3: Redesign Proposed Projects to Avoid Substantial Effects on Special-Status Plants VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant to potentially significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Program Construction	Significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources	Less than significant
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-8: Compensate for the Loss of Wetlands and Other Waters	Less than significant
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees	Less than significant
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than Significant	N/A	N/A
VEG-7: Opportunity for Habitat Restoration in Enlarged Floodplain Following Program Construction	Beneficial	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
CHP Academy Applicant Preferred Alternative			
VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Program Construction	Significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees	Less than significant
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than Significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
CHP Academy Alternative B			
VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Program Construction	Significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees	Less than significant
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than Significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
The Rivers Applicant Preferred Alternative			
VEG-3: Disturbance or Removal of Riparian Vegetation as a Result of Program Construction	Significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources	Less than significant
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees	Less than significant
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
The Rivers Alternative B			
VEG-3: Disturbance or Removal of Riparian Vegetation as a Result of Program Construction	Significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources	Less than significant
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor	Less than significant
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees	Less than significant
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
FISHERIES AND AQUATICS			
Flood and Recreation Program Alternatives			
FISH-1: Permanent Loss of Habitat, Including Shaded Riverine Aquatic Cover, for Special-Status Fish Species Resulting from Levee Vegetation Removal	Significant	FISH-MM-1: Compensate for Unavoidable Effects on Shaded Riverine Aquatic Cover	Potentially significant and unavoidable
FISH-2: Loss of Habitat for Special-Status Fish Species as a Result of Construction	Significant	FISH-MM-1: Compensate for Unavoidable Effects on Shaded Riverine Aquatic Cover	Less than significant to potentially significant and unavoidable
FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	N/A
FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	N/A
FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction	Less than significant	N/A	N/A
FISH-6: Loss of Fish, Including Special-Status Species, from Direct Injury as a Result of Construction	Less than significant	N/A	N/A
FISH-7: Increase in Sedimentation and Turbidity of Adjacent Water Bodies as a Result of Boating Activity	Less than significant	N/A	N/A
FISH-8: Release of Contaminants to Adjacent Water Bodies as a Result of Boating Activity	Less than significant	N/A	N/A
FISH-9: Disturbance of Special-Status Fish Species as a Result of Increased Boating Activity	Less than significant	N/A	N/A
FISH-10: Injury to or Mortality of Special-Status Fish Species as a Result of Pile Driving	Less than significant	N/A	N/A
FISH-11: Change in Predation on Native Fish Species Attributable to New Overwater and In-Water Structures	Less than significant	N/A	N/A
FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish	Less than significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
CHP Academy Alternative B			
FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	N/A
FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	N/A
FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction	Less than significant	N/A	N/A
The Rivers Alternative B			
FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	N/A
FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	N/A
FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction	Less than significant	N/A	N/A
WILDLIFE			
Flood and Recreation Program Alternatives			
WILD-1: Permanent Loss of Riparian Habitat for Special-Status Wildlife Species as a Result of Levee Vegetation Removal	Significant	VEG–MM-1: Compensate for the Disturbance or Removal of Riparian Habitat	Potentially significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction	Significant	VEG–MM-1: Compensate for the Disturbance or Removal of Riparian Habitat VEG-MM-8: Compensate for the Loss of Wetlands and Other Waters WILD-MM-1: Document Special-Status Wildlife Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant to potentially significant and unavoidable
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction	Significant	WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Impacts	Less than significant
WILD-4: Disruption to Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)	Less than significant	N/A	N/A
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone WILD-MM-1: Document Special-Status Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Giant Garter Snake)	Significant	WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)	Less than significant	N/A	N/A
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Migratory Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Burrowing Owl)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Other Species)	Less than significant	N/A	N/A
WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A
CHP Academy Alternative B			
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone WILD-MM-1: Document Special-Status Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Giant Garter Snake)	Significant	WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)	Less than significant	N/A	N/A
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Migratory Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Burrowing Owl)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Other Species)	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)	Less than significant	N/A	N/A
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone WILD-MM-1: Document Special-Status Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)	Significant	VEG-MM-1: Compensate for the Disturbance or Removal of Riparian Habitat WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than Significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Other Special-Status Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Burrowing Owl)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Other Common Species)	Less than significant	N/A	N/A
WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A
The Rivers Alternative B			
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)	Less than significant	N/A	N/A
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone WILD-MM-1: Document Special-Status Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)	Significant	VEG-MM-1: Compensate for the Disturbance or Removal of Riparian Habitat WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than Significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Other Special-Status Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Burrowing Owl)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA	Less than significant
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)	Significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds	Less than significant
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Other Common Species)	Less than significant	N/A	N/A
WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A
LAND USE AND AGRICULTURE			
Flood and Recreation Program Alternatives			
LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than Significant	N/A	N/A
LU-2: Change in Land Use Designations or Potential to Conflict with Land Use Designations as a Result of Construction	Less than Significant	N/A	N/A
LU-3: Important Farmland Converted to Non-Agricultural Uses	Less than Significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than Significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
CHP Academy Alternative B			
LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than Significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than significant	N/A	N/A
LU-2: Change in Land Use Designations or Potential to Conflict with Local Land Use Designations as a Result of Construction	Less than significant	N/A	N/A
The Rivers Alternative B			
LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than significant	N/A	N/A
LU-2: Change in Land Use Designations or Potential to Conflict with Local Land Use Designations as a Result of Construction	Less than significant	N/A	N/A
SOCIOECONOMICS AND COMMUNITY EFFECTS			
Flood and Recreation Program Alternatives			
SOC-1: Effects on Residents	Less than significant to significant and unavoidable	N/A	Less than significant to significant and unavoidable
SOC-2: Loss of Agricultural Production and Employment	Less than significant	N/A	N/A
SOC-3: Temporary Disruption of Farming and Local Business Activity during Construction	Less than significant	N/A	N/A
SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A
SOC-5: Continued Economic Development in the City of West Sacramento	Beneficial	N/A	N/A
CHP Academy Applicant Preferred Alternative			
SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
CHP Academy Alternative B			
SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A
The Rivers Applicant Preferred Alternative			
SOC-1: Effects on Residents	Significant and Unavoidable	N/A	Significant and Unavoidable
SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A
The Rivers Alternative B			
SOC-1: Effects on Residents	Significant and Unavoidable	N/A	Significant and Unavoidable
SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A
ENVIRONMENTAL JUSTICE			
Flood and Recreation Program Alternatives			
EJ-1: Disproportionate Effect on Minority or Low-Income Populations	Less than significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	N/A
CHP Academy Alternative B			
EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	N/A
The Rivers Applicant Preferred Alternative			
EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	N/A
The Rivers Alternative B			
EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	N/A
VISUAL RESOURCES			
Flood and Recreation Program Alternatives			
VIS-1: Affect a Scenic Vista	Significant	No feasible mitigation	Significant and unavoidable
VIS-2: Create a New Source of Light or Glare	Significant	No feasible mitigation	Significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
VIS-3: Affect Scenic Resources along a Designated Scenic Highway	No effect	N/A	N/A
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance	Significant	No feasible mitigation	Significant and unavoidable
VIS-6: Conflict with Local Visual Resource Policies	Significant	No feasible mitigation	Significant and unavoidable
CHP Academy Applicant Preferred Alternative			
VIS-2: Create a New Source of Light or Glare	Significant	No feasible mitigation	Significant and unavoidable
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
CHP Academy Alternative B			
VIS-2: Create a New Source of Light or Glare	Significant	No feasible mitigation	Significant and unavoidable
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
VIS-2: Create a New Source of Light or Glare	Significant	No feasible mitigation	Significant and unavoidable
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance	Significant	No feasible mitigation	Significant and unavoidable
VIS-6: Conflict with Local Visual Resource Policies	Significant	No feasible mitigation	Significant and unavoidable
The Rivers Alternative B			
VIS-2: Create a New Source of Light or Glare	Significant	No feasible mitigation	Significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance	Significant	No feasible mitigation	Significant and unavoidable
VIS-6: Conflict with Local Visual Resource Policies	Significant	No feasible mitigation	Significant and unavoidable
RECREATION			
Flood and Recreation Program Alternatives			
REC-1: Temporary Disruption of Recreation Opportunities during Construction (Sacramento River North Levee, Sacramento River South Levee, Port North Levee, Port South Levee, DWSC West Levee, DWSC East Levee, Sacramento Bypass Levee)	Less than significant	N/A	N/A
REC-1: Temporary Disruption of Recreation Opportunities during Construction (Yolo Bypass Levee)	Significant	REC-MM-1: Temporarily Re-Route Yolo Causeway Bicycle Path	Less than significant
REC-2: Temporary Obstruction of Access to Marina or Boat Launch Facilities (Sacramento River North Levee, Sacramento River South Levee, Port South Levee)	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor (Sacramento River North Levee, Sacramento River South Levee, Port North Levee, Port South Levee, DWSC West Levee, DWSC East Levee, Yolo Bypass Levee)	Significant	No feasible mitigation	Significant and unavoidable
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor (Setback Levee on the Sacramento River South Levee, Sacramento Bypass Levee)	Less than significant	N/A	N/A
REC-4: Permanent Loss of Recreation Facilities or Opportunities (Sacramento River North Levee, Sacramento River South Levee, Setback Levee on the Sacramento River South Levee, Stability Berm on the Sacramento River South Levee, Port South Levee, Yolo Bypass Levee)	Less than significant	N/A	N/A
REC-4: Permanent Loss of Recreation Opportunities (Flood Wall on the Port South Levee)	Significant	REC-MM-2: Preserve Access to Barge Canal Recreation Access	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
REC-5: Temporary Disruption of Recreational Boating Activities during Construction (Sacramento River North and Sacramento River South Levees, DWSC West and DWSC East Levees)	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities (Sacramento River North Levee, Sacramento River South Levee, Port North Levee, Port South Levee, South Cross Levee, DWSC East Levee, Yolo Bypass Levee and Sacramento Bypass Levee)	Beneficial	N/A	N/A
CHP Academy Applicant Preferred Alternative			
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A
CHP Academy Alternative B			
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A
The Rivers Applicant Preferred Alternative			
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Significant	No feasible mitigation	Significant and unavoidable
REC-4: Permanent Loss of Recreation Facilities or Opportunities	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A
The Rivers Alternative B			
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Significant	No feasible mitigation	Significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
REC-4: Permanent Loss of Recreation Facilities or Opportunities	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A
UTILITIES AND PUBLIC SERVICES			
Flood and Recreation Program Alternatives			
PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training	Less than significant
PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A
PUB-3: Expansion of Stormwater Drainage Facilities	Less than significant	N/A	N/A
CHP Academy Applicant Preferred Alternative			
PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training	Less than significant
PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A
CHP Academy Alternative B			
PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training	Less than significant
PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A
PUB-3: Expansion of Stormwater Drainage Facilities	Less than significant	N/A	N/A
The Rivers Applicant Preferred Alternative			
PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training	Significant and unavoidable
PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
The Rivers Alternative B			
PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training	Significant and unavoidable
PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A
PUBLIC HEALTH AND ENVIRONMENTAL HAZARDS			
Flood and Recreation Program Alternatives			
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Sites	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures	Less than significant
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A
PH-5: Hazardous Materials, Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School	Significant	PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities	Less than significant
CHP Academy Applicant Preferred Alternative			
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures	Less than significant
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A
CHP Academy Alternative B			
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary)Environmental Site Assessment Investigations and Implement Required Measures	Less than significant
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A
The Rivers Applicant Preferred Alternative			
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures	Less than significant
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A
PH-5: Hazardous Materials Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School	Significant	PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities	Less than significant

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
The Rivers Alternative B			
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures	Less than significant
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A
PH-5: Hazardous Materials Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School	Significant	PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities	Less than significant
CULTURAL RESOURCES			
Flood Control and Recreation Program Alternatives			
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Significant	Implement Section 106 Programmatic Agreement and Historic Properties Management Plan	Significant and unavoidable
CR-2: Change in the Significance of an Archaeological Resource	Significant	Implement Section 106 Programmatic Agreement and Historic Properties Management Plan	Significant and unavoidable
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	Implement Section 106 Programmatic Agreement and Historic Properties Management Plan	Significant and unavoidable
CHP Academy Applicant Preferred Alternative			
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than significant	N/A	N/A
CR-2: Change in the Significance of an Archaeological Resource	Significant	CR-MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Significant and unavoidable

Effect	NEPA/CEQA Finding	Mitigation Measure	Finding with Mitigation Considered
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Significant and unavoidable
CHP Academy Alternative B			
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than significant	N/A	N/A
CR-2: Change in the Significance of an Archaeological Resource	Significant	CR-MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Significant and unavoidable
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Significant and unavoidable
The Rivers Applicant Preferred Alternative			
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than Significant	N/A	N/A
CR-2: Change in the Significance of an Archaeological Resource	Significant	CR-MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Less than significant
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Significant and unavoidable
The Rivers Alternative B			
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than Significant	No mitigation required	N/A
CR-2: Change in the Significance of an Archaeological Resource	Significant	CR-MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Less than significant
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan	Significant and Unavoidable

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List of Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
µS/cm	microSiemens per centimeter
A.D.	Anno Domini
AADT	annual average daily traffic
AB 32	Assembly Bill 32, the California Global Warming Solutions Act of 2006
AB 75	Assembly Bill 75
AB 939	Assembly Bill 939
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADT	Average daily traffic
AEP	annual exceedance probability
AEPs	Annual Exceedance Probabilities
af	acre-feet
AG	California Attorney General
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
APA	Applicant Preferred Alternative
APE	area of potential effect
ASTM	American Society for Testing and Materials
B.P.	Before Present
BA	biological assessment
BAAQMD	Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan
bgs	below ground surface
BMPs	best management practices
BNSF	Burlington Northern Santa Fe Railroad
BO	biological opinion
BOD	biochemical oxygen demand
BSSCP	bentonite slurry spill contingency plan
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
$CaCO_3$	calcium carbonate
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
Carl Moyer Program	Carl Moyer Memorial Air Quality Standards Attainment Program
CAT	Climate Act Team

CBSC	California Building Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDEC	California Data Exchange Center
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of West Sacramento
CIWMP	Countywide Integrated Waste Management Plan
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNG	compressed natural gas
CNPPA	California Native Plant Protection Act of 1977
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
Common Features	American River Common Features Project
Comp Study	Sacramento and San Joaquin River Basins Comprehensive Study
Comprehensive Study	Sacramento and San Joaquin River basins California Comprehensive Study
CO-OPS	NOAA Center for Operational Oceanographic Products and Services
CPTs	cone penetration test equipment
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CTR	California Toxics Rule
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CVP	Central Valley Project
CWA	Federal Clean Water Act
cy	cubic yards
dB	decibel
dBA	A-weighted decibel
Delta	Sacramento–San Joaquin River Delta
DFG	California Department of Fish and Game
DIPE	di-isopropyl ether
DO	dissolved oxygen
DPM	diesel particulate matter
DPSs	distinct population segments
DSM	deep soil mixing
DWR	California Department of Water Resources

DWSC	Sacramento Deep Water Ship Channel
EB	eastbound
EC	Electrical conductivity
EFH	essential fish habitat
EIPs	early implementation projects
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ETBE	ethyl tertiary butyl ether
ETL	Engineering Technical Letter
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
Flood Control Project	Sacramento River Flood Control Project
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FR	Federal Register
ft/s	feet per second
ft^2	square feet
General Construction Permit	General Permit for Construction Activities
GHGs	Greenhouse Gases
GIS	geographic information system
GPS	geographic positioning system
GRR	West Sacramento General Reevaluation Report
H	horizontal feet
HABS/HAER	Historic American Building Survey/Historic American Engineering Record
HAPs	hazardous air pollutants
HEP	Habitat Evaluation Procedure
HPMP	Historic Properties Management Plan
I-5	Interstate 5
I-80	Interstate 80
in/sec	inches per second
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
LF	less favorable
LIDAR	Light Detection and Ranging
L_{min} and L_{max}	minimum and maximum sound levels
LNG	liquefied natural gas
LOS	Level of service

L_{xx}	percentile-exceeded sound levels
m/km	meters/kilometer
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MBTA	Migratory Bird Treaty Act
MDPS	Main Drain Pump Station
MF	more favorable
mg/L	milligrams per liter
MOA	memorandum of agreement
MOU	memorandum of understanding
MRZ	mineral resource zone
MTBE	methyl tertiary butyl ether
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAVD 88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGVD29	National Geodetic Vertical Datum of 1929
NHC	Northwest Hydraulic Consultants
NHPA	National Historic Preservation Act
NLIP	Natomas Levee Improvements Program
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Determination
NOI	notice of intent
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTR	National Toxics Rule
NTUs	Nephelometric turbidity units
NWPs	Nationwide permits
O&M	operations and maintenance
OHWM	ordinary high water mark
OMB	Federal Office of Management and Budget's
OPR	California Office of Planning and Research
PA	Programmatic Agreement
Parks Master Plan	City of West Sacramento Parks Master Plan
PCBs	polychlorinated biphenyls
PCBs	polychlorinated biphenyls

PERP	Portable Equipment Registration Program
PG&E	The Pacific Gas and Electric Company
pH	potential of hydrogen
PIR	problem identification report
PL	Public Law
PM10	particulate matter less than 10 microns in diameter
PM2.5	particulate matter less than 2.5 microns in aerodynamic diameter
ppm	parts per million
PPMP	pollution prevention and monitoring program
ppt	parts per thousand
Ppv	peak particle velocity
PRC	Public Resources Code
Qa	Quaternary alluvium
Qal	undivided older alluvium deposits
Qb	Quaternary basin
Qmu and Qml	Modesto formation (upper and lower member)
Qp	peat deposits
Qru and Qrl	Riverbank formation (upper and lower member)
Qsc	stream channel deposits
RD	Reclamation District
RD 537	Reclamation District 537
RD 900	Reclamation District 900
Reporting Rule	Greenhouse Gas Reporting Rule
RM	River Mile
ROD	Record of Decision
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SAFCA	Sacramento Area Flood Control Agency
SAM	Standard Assessment Program
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SEIS/SEIR	Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLM	sound level meter
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act of 1975
SO_2	sulfur dioxide

SPCCP	spill prevention, control, and counter-measure plan
SPRR	Southern Pacific Railroad
SPTs	standard penetration tests
SR	State Route
SRA	shaded riverine aquatic
SRFCP	Sacramento River Flood Control Project
SRMP	Sacramento Riverfront Master Plan
ST1	first short-term measurement
ST2	second short-term measurement
State Water Board	State Water Resources Control Board
SVAB	Sacramento Valley Air Basin
SWP	State Water Project
SWPPP	stormwater pollution prevention plan
TACs	toxic air contaminants
TAME	tertiary amyl methyl ether
TBA	tertiary butyle alcohol
TCPs	traditional cultural properties
TDS	total dissolved solids
TMDL	total maximum daily load
TSS	Total suspended sediment
UBC	Uniform Building Code
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987 (42 USC 4601 et seq.)
UPRR	Union Pacific Railroad
US 50	US Highway 50
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UYLIP	Upper Yuba River Levee Improvement Project
V	vertical feet
V/C	volume-to-capacity
VELB	valley elderberry longhorn beetle
VMT	vehicle miles traveled
WB	westbound
WDRs	waste discharge requirements
WRDA	Water Resources Development Act
WSAFCA	West Sacramento Area Flood Control Agency
WSLIP or the program	West Sacramento Levee Improvements Program
YSAQMD	Yolo-Solano Air Quality Management District

Chapter 1
Introduction

The West Sacramento Area Flood Control Agency (WSAFCA) is proposing the West Sacramento Levee Improvements Program (WSLIP or the program) to improve the levees in Yolo and Solano Counties that protect the city of West Sacramento.

To protect human health and safety and prevent adverse effects on property and its economy, the City of West Sacramento (City), as part of WSAFCA, and in partnership with the California Department of Water Resources (DWR), embarked on a comprehensive evaluation of the condition of the levees protecting the city in 2006 (HDR, Inc. 2008). The evaluation was necessary to determine the level of flood protection provided by the existing levee system, identify the magnitude and severity of deficiencies, and propose potential levee improvements. The results of the comprehensive evaluation revealed several deficiencies that require substantial improvements to meet current flood protection standards. *Note: In this document, "city" (lowercase) refers to the area of West Sacramento while "City" (capitalized) refers to governmental entity of West Sacramento. "West Sacramento" is also used in some instances, typically referring to the geographic area.*

To implement the proposed improvements, WSAFCA is requesting permission from the U.S. Army Corps of Engineers (USACE) pursuant to Section 14 of the Rivers and Harbors Act of 1899 (Title 33 of the United States Code [USC], Section 408, [33 USC 408]), hereinafter referred to as Section 408, for the alteration of the Federal flood control project; authority under Section 404 of the Federal Clean Water Act (CWA) (33 USC 1344) for the placement of fill or dredged material into jurisdictional waters of the United States; and authority under Section 10 of the Rivers and Harbors Act (33 USC 403) where work would be performed in, under, or over navigable waters. USACE must grant permission for the project pursuant to Section 408, Section 404, and Section 10, triggering the requirement for USACE to comply with the National Environmental Policy Act (NEPA). A more detailed discussion of relevant laws, policies, plans, and regulations is included in Chapter 7, Compliance with Applicable Laws, Policies, and Plans and Regulatory Framework.

In light of the flood risk to West Sacramento, WSAFCA is taking proactive measures to reduce risk and improve the level of flood protection for the city. Specifically, the WSLIP and the early implementation projects (EIPs) (described in 1.5) under the program are targeted to reduce risk and are proposed in sponsorship by WSAFCA in advance of USACE's project being studied under the West Sacramento General Reevaluation Report (GRR). As described in 1.6.1.1.2, USACE is preparing a West Sacramento GRR. As the GRR is not scheduled for completion until 2012 to in turn allow improvements in successive years, the WSLIP is being advanced by WSAFCA to facilitate EIPs to more immediately address flood risk before the GRR is complete. The WSLIP program evaluation and EIPs are intended to be consistent and compatible with the final West Sacramento GRR. Except for EIPs constructed in advance of the GRR, the WSLIP improvements would be substantially implemented through the GRR once in place. The GRR will include independent NEPA review from the WSLIP; however, the processes are being coordinated for consistency and efficiency.

1.1 Document Purpose and Structure

1.1.1 Document Overview

This document is a joint program and project Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and is intended to satisfy the requirements of NEPA and the California Environmental Quality Act (CEQA) for disclosing environmental effects and recommended mitigation measures related to a proposed action, and alternatives, prior to making a decision on project approval. A "joint" EIS/EIR means that the NEPA lead agency (USACE) and the CEQA lead agency (WSAFCA) are each making a decision on a proposed action and have agreed to analyze the effects of that action in the same environmental document.

Specifically, this document provides program-level analysis for the WSLIP to support project-level analysis and decision-making for EIPs. Two EIPs are described and analyzed at the project level to support a NEPA Record of Decision (ROD) and CEQA Notice of Determination (NOD). These EIPS are at the CHP Academy site and The Rivers site, described more fully in Chapters 4 and 5, respectively. It is anticipated that analysis of future EIPs will be subsequently tiered from this document. The purpose of program-level analysis is to describe the planning context for the project-level actions and provide thorough consideration of cumulative, indirect, and growth-inducing effects. All sections of this EIS/EIR support the program- and project-level analyses; however, project-level details are focused in Chapters 4 and 5 where available and applicable.

This section provides guidance for "how to" read and interpret the EIS/EIR, including the following elements:

- document organization;
- background of NEPA and CEQA requirements;
- NEPA and CEQA lead agency roles;
- use of a combined document for NEPA and CEQA compliance;
- use of NEPA and CEQA terminology;
- resource analysis structure, including relationship of program and project analyses; and
- discussion of vertical datum used in this document.

1.1.2 Document Organization

This EIS/EIR is organized into the following sections:

- Executive Summary
- List of Acronyms and Abbreviations
- Chapter 1, Introduction
- Chapter 2, Alternatives
- Chapter 3, Affected Environment and Environmental Consequences
- Chapter 4, CHP Academy Early Implementation Project
- Chapter 5, The Rivers Early Implementation Project

- Chapter 6, Growth-Inducing and Cumulative Effects
- Chapter 7, Compliance with Applicable Laws, Policies, Plans, and Regulatory Framework
- Chapter 8, References
- Chapter 9, List of Preparers
- Chapter 10, List of Recipients
- Index
- Appendix A, Scoping Report
- Appendix B, U.S. Army Corps of Engineers Interim Vegetation Guidance for Control of Vegetation on Levees
- Appendix C, Supporting Documents, Figures, and Tables for Geomorphology and Flood Control
- Appendix D, Utility Assessment for Basin-Wide Problem Identification Report, HDR, Inc.
- Appendix E, Air Quality Information
- Appendix F, Plant Lists
- Appendix G, Correspondence Regarding Special-Status Species
- Appendix H, Public Health and Hazards: EDR Data Map Environmental Atlas
- Appendix I, Correspondence Regarding Cultural Resources

1.1.3 NEPA and CEQA Requirements

The Council on Environmental Quality's (CEQ's) regulations for implementing NEPA specify that a Federal agency preparing an EIS must consider the effects of the proposed action and alternatives on the environment; these include effects on ecological, aesthetic, historical, and cultural resources and economic, social, and health effects. Environmental effects are categorized as direct, indirect, and cumulative. An EIS also must discuss possible conflicts with the objectives of Federal, state, regional, and local land use plans, policies, or controls for the area concerned; energy requirements and conservation potential; urban quality; the relationship between short-term uses of the environment and long-term productivity; and irreversible or irretrievable commitments of resources. An EIS must identify relevant, reasonable mitigation measures not already included in the proposed action or alternatives that could avoid, minimize, rectify, reduce, eliminate, or compensate for the project's adverse environmental effects. (40 Code of Federal Regulations [CFR] 1502.14, 1502.16, and 1508.8.)

The CEQA Guidelines explain that the environmental analysis for an EIR must evaluate impacts associated with the project and identify mitigation for any potentially significant impacts. All phases of a proposed project, including construction and operation, are evaluated in the analysis. Section 15126.2 of the State CEQA Guidelines states:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the

short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, and human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR also must discuss inconsistencies between the proposed project and applicable general plans and regional plans (State CEQA Guidelines Section 15125[d]).

An EIR must describe any feasible measures that could minimize significant adverse impacts, and the measures are to be fully enforceable through permit conditions, agreements, or other legally binding instruments (State CEQA Guidelines Section 15126.4[a]). Mitigation measures are not required for effects that are found to be less than significant.

1.1.3.1 NEPA Lead Agency

USACE is the lead agency preparing this EIS for the purposes of compliance with NEPA. As stated above, USACE maintains authority pursuant to Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408), for the alteration of a Federal project; authority under Section 404 of the Federal CWA (33 USC 1344) for the placement of fill or dredged material into jurisdictional waters of the United States; and authority under Section 10 of the Rivers and Harbors Act (33 USC 403) where work would be performed in, under, or over navigable waters. Under NEPA and the CEQ's NEPA regulations (40 CFR 1500 *et seq*.), Federal agencies are required to evaluate the environmental effects of an action, including feasible alternatives, and identify mitigation measures to minimize adverse effects when they propose to carry out, approve, or fund a project that may have a significant effect on the environment. USACE has determined that its involvement in the WSLIP, including its authority over alterations to Federal project levees, requires compliance with NEPA and preparation of an EIS.

1.1.3.2 CEQA Lead Agency

WSAFCA is the lead agency preparing this EIR for the purposes of compliance with CEQA. WSAFCA is a Joint Powers Authority created in 1994 through a Joint Exercise of Powers Agreement by the City, Reclamation District 900 (RD 900), and Reclamation District 537 (RD 537). WSAFCA was established to coordinate the planning and construction of flood protection facilities and to finance the local share of flood control projects. WSAFCA's member agencies are responsible for the operations and maintenance of the detention basins, pump stations, and levees that protect the city.

Pursuant to Section 15126(d) of the State CEQA Guidelines, an EIR must describe and evaluate a reasonable range of alternatives that would feasibly attain most of the basic project objectives and would avoid or substantially lessen any significant impact of the project as proposed.

1.1.3.3 Combined Program and Project Environmental Impact Statement/ Environmental Impact Report

In addition to being a joint EIS/EIR, this document is a combined program- and project-level EIS/EIR. The WSLIP is a program of levee improvements that will be implemented over 10 to 15 years, perhaps longer, with reach- or deficiency-specific components that are proposed for implementation in the short term (as soon as 2011). A program EIS/EIR analyzes the broad

environmental effects of a program with the acknowledgment that more detailed analysis may be required for components of the program when those components are proposed for implementation and greater specificity is known. Program review provides a forum for discussing combined and cumulative effects of individual projects (projects both internal and external to the program), thereby avoiding segmentation. Two of the WSLIP components are proposed for construction as soon as 2011, and details are sufficiently developed to enable a site-specific environmental analysis at a level of detail sufficient for USACE and WSAFCA to support a decision of approval. Therefore, the program and project analyses are being combined into one document to communicate the program and project context in a transparent manner, disclose available information, and facilitate efficient analysis and review.

Both NEPA and CEQA provide guidelines for the preparation of a program EIS/EIR. A program EIS/EIR is prepared for an agency program or series of actions that typically are connected by one or more of the following characteristics:

- are linked geographically (same general location, region, or the same body of water) and could be characterized as one large project;
- involve rules, regulations, plans, or other general criteria to govern the conduct of a continuing program;
- have individual activities carried out under the same authorizing statutory or regulatory authority; and
- have actions that have relevant similarities, such as common timing, effects, alternatives, methods of implementation, media, or subject matter (State CEQA Guidelines Section 15168, and 40 CFR Section 1508).

USACE and WSAFCA have determined that this combined and joint EIS/EIR is the most appropriate means to comply with both NEPA and CEQA because of the need to coordinate among Federal and state agencies, and the need to complete environmental review as expeditiously as possible. This document incorporates environmental review required under multiple Federal, state, and local permits and regulations (Chapter 7, Compliance with Applicable Laws, Policies, and Plans and Regulatory Framework).

1.1.4 Application of NEPA and CEQA Principles and Terminology

NEPA and CEQA are similar in that both laws require the preparation of an environmental study to evaluate the environmental effects of proposed government activities. However, there are several differences between the two regarding terminology, procedures, environmental document content, and substantive mandates to protect the environment. For this environmental evaluation, the more rigorous of the two laws was applied in cases in which NEPA and CEQA differ.

Table 1-1 below compares the terminology of NEPA and CEQA for common concepts.

Table 1-1. Key to General NEPA and CEQA Terminology

NEPA Term	Correlating CEQA Term
Lead Agency	Lead Agency
Cooperating Agency	Responsible Agency
Environmental Impact Statement	Environmental Impact Report
Record of Decision	Findings
Preferred Alternative	Proposed Project
Project Purpose	Project Objectives
No Action Alternative	No Project Alternative
Affected Environment	Environmental Setting
Effect	Impact

In some cases in this document, both NEPA and CEQA terminology are used, as in Chapter 1 where the project purpose and need and project objectives are discussed. The terms *environmental consequences, environmental impacts,* and *environmental effects* are considered synonymous in this analysis, and *effects* is used for consistency.

Technical terms used in the EIS/EIR are typically defined in their first instance of use in the text. A list of acronyms and abbreviations precedes Chapter 1.An index follows Chapter 10.

1.1.5 Resource Analysis Structure

The resource sections in Chapter 3 contain the affected environment and environmental consequences analysis (outlined in detail below) at the program level. Chapters 4 and 5 contain the project-level analysis. In most cases, the program-level information such as the affected environment, analysis methods, and determination of effects also applies to the project-level analysis in Chapters 4 and 5. Therefore, rather than entirely repeating that information, the relevant text is summarized in Chapters 4 and 5 and the reader is referred to the information as discussed under the program in Chapter 3.

- **Introduction.** This section introduces the scope of the resource analysis.
    - **Sources of Information.** This section lists the sources of information pertinent to the analysis of project and program impacts on this specific resource.
- **Affected Environment.** This section includes two sections, Regulatory Setting and Environmental Setting.
    - **Regulatory Setting.** This section lists and describes laws, regulations and policies that affect the resource or the assessment of effects on the resource. Often the regulatory framework is the basis for the conclusion of the level of significance and therefore plays a crucial role in effect assessment.
    - **Environmental Setting.** This section provides an overview of the physical environmental conditions in the area at the time of or prior to the publication of the Notice of Preparation that could be affected by implementation of the proposed alternatives in accordance with NEPA regulations (40 CFR 1502.15) and State CEQA Guidelines Section 15125.

- **Environmental Consequences.** This section describes the analysis of effects relating to each resource area for each of the alternatives in accordance with NEPA regulations (40 CFR 1502.16) and with State CEQA Guidelines Section 15126, 15126.2, and 15143.
    - **Assessment Methods.** This section describes the methods, models, process, procedures, data sources, and/or assumptions used to conduct the effect analysis. Where possible, effects are evaluated quantitatively. Where quantification is not possible, effects are evaluated qualitatively.
    - **Determination of Effects.** This section provides the criteria used in this document to define the level at which an effect would be considered significant in accordance with CEQA and adverse in accordance with NEPA. Significance criteria (sometimes called thresholds of significance) used in this EIS/EIR are based on the checklist presented in Appendix G of the State CEQA Guidelines; factual or scientific information and data; and regulatory standards of Federal, state, and local agencies. Under NEPA, preparation of an EIS is triggered if a Federal action has the potential to "significantly affect the quality of the human environment," which is based on the context and intensity of each potential effect. The significance thresholds used in this EIS/EIR also encompass the factors taken into account under NEPA to evaluate the context and the intensity of the effects of an action.
    - **Effects and Mitigation Measures.** To comply with NEPA and CEQA, the effects/impacts are considered and evaluated as to whether they are direct, indirect, or cumulative. Direct effects are those that are caused by the action and occur at the same time and place. Indirect effects are reasonably foreseeable consequences to the physical environment that may occur at a later time or at a distance from the project area. Because direct and indirect effects are often interrelated, typically there is no distinction made between the two in the effects discussion. Cumulative effects for all resource areas are combined and discussed in Chapter 6, Growth-Inducing and Cumulative Effects.

      The effects are listed numerically and sequentially throughout each section. An effect statement precedes the discussion of each effect and provides a summary of the effect topic. The numbering system provides a mechanism for tracking unique effects by resource area. The numeric assignations at the program level in Chapter 3 are applied to the project-level analyses in Chapters 4 and 5, supported by additional details as needed.

      Each effect is accompanied by a finding or conclusion, as required under NEPA and CEQA. Table 1-2 provides a key for relating the effect findings by relative severity (increasing in degree of adversity to the environment).

Table 1-2. Key to Effect Findings (by increasing adversity)

Finding
Beneficial
No Effect
Less than Significant
Significant
Significant and Unavoidable

For the purposes of the analyses in this document, the effect findings are defined more specifically below.

- **Beneficial.** This effect would provide benefit to the environment as defined for that resource.
- **No Effect.** This effect would cause no discernible change in the environment as measured by the applicable significance criterion; therefore, no mitigation would be required.
- **Less than Significant.** This effect would cause no substantial adverse change in the environment as measured by the applicable significance criterion; therefore, no mitigation would be required.
- **Significant.** This effect would cause a substantial adverse change in the physical conditions of the environment. Effects determined to be significant based on the significance criteria fall into two categories: those for which there is feasible mitigation available that would avoid or reduce the environmental effects to less-than-significant levels and those for which there is either no feasible mitigation available or for which, even with implementation of feasible mitigation measures, there would remain a significant adverse effect on the environment. Those effects that cannot be reduced to a less-than-significant level by mitigation are identified as significant and unavoidable, described below.
- **Significant and Unavoidable**. This effect would cause a substantial adverse change in the environment that cannot be avoided or mitigated to a less-than-significant level if the program is implemented. Even if the effect finding is still considered significant with the application of mitigation, the applicant is obligated to incorporate all feasible measures to reduce the severity of the effect.
- **Mitigation Measures.** Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion. Similar to the effect descriptions, mitigation measures are listed numerically and sequentially throughout each section. A mitigation measure statement precedes the discussion of each measure and provides a summary of the measure topic. The numbering system provides a mechanism for tracking unique measures by resource area. The numeric assignations at the program level in Chapter 3 are applied to the project-level analyses in Chapters 4 and 5, supported by additional details as needed.

1.1.6 Elevation Datum Used in This Document

Elevations used in this document are referenced to the North American Vertical Datum of 1988 (NAVD 88) to the greatest extent feasible. It should be noted that many of the studies cited in the alternatives descriptions and analyses were originally conducted in the National Geodetic Vertical Datum of 1929 (NGVD 29) and have been converted where feasible. In some cases, such as where a figure has been borrowed from another study, the elevations have not been converted to preserve the integrity of the source study.

1.2 WSLIP Regional Setting and Study Area

The regional setting of the WSLIP is the Sacramento River Flood Control Project (SRFCP), beginning as far north as Redding, California, and extending south to the Sacramento–San Joaquin River Delta (Delta) (Figure 1-1). For the analysis of effects (direct, indirect, or cumulative), the regional context of the SRFCP is taken into consideration.

The WSLIP study area refers to the area that would be protected by the proposed levee improvements, including the city of West Sacramento itself and the lands within WSAFCA's boundaries, which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (DWSC). The flood protection system associated with these waterways consists of over 50 miles of levees in RD 900, RD 537, DWR's Maintenance Area 4, and the DWSC (Figure 1-2). These levees completely surround the city with the exception of intersecting waterways. For the purposes of this program, the levees surrounding the city have been divided into nine subreaches, as shown on Figure 1-2. These reaches are described in detail in Section 1.2.1, WSLIP Study Reaches and Potential Construction Footprint.

The city of West Sacramento is located in eastern Yolo County at the confluence of the American and Sacramento Rivers. The city lies within the natural floodplain of the Sacramento River, which bounds the city along the east. It is made up of reclaimed land protected from floods by levees and the Yolo and Sacramento Bypass systems. These bypasses divert floodflows around the city to the west. In addition to the area within the city limits (in Yolo County), the study area partially extends into Solano County on the extreme southwestern edge along the DWSC. Therefore, resources in Solano County have the potential to be affected by the WSLIP and these are described on a resource-specific basis.

The DWSC and barge canal bisect the city into two subbasins, separating the developing Southport area from the more established neighborhoods of Broderick and Bryte to the north (City of West Sacramento 2000). The DWSC provides a navigable passageway for commercial shipping to reach the Port of West Sacramento (formerly Port of Sacramento) from the Pacific Ocean via the San Francisco Bay, Delta, and connecting waterways. The DWSC water surface elevation is directly influenced by changes in water levels in the Delta at the south end of the Yolo Bypass and is relatively insensitive to stage in the Sacramento River. The barge canal and lock system, formerly a Federal facility but now de-authorized, were constructed to provide a navigable, gated connection between the Port of West Sacramento and the Sacramento River, but no longer functions for navigability because the channel approaches have silted in from naturally deposited sediment and because a fixed roadway crossing precludes passage of any commercial vessel.

The area that would be protected by the WSLIP—the city of West Sacramento—is the metropolitan area most downstream within the SRFCP, along with the city of Sacramento across the Sacramento River on the left bank. *Note: All levees, reaches, and landmarks are referred to using river navigation terminology. Left bank and right bank refer to locations when facing downstream in the direction of flow.* The downstream location of the study area is important relative to other flood risk reduction projects occurring upstream within the SRFCP, namely, the American River Common Features Project, Natomas Levee Improvement Program, projects undertaken by the Three Rivers Levee Improvement Authority, the Sutter Basin Project, and the Yuba Basin Project (Figure 1-3). These and other projects are described under Section 1.6, Related Actions, Programs, and Planning Efforts.

As introduced above, the WSLIP area is partly within the Delta. Specifically, the study area is within the bounds of the Legal Delta as defined by the State of California under the Delta Protection Act (Section 12220 of the Water Code). The Legal Delta is further subdivided into a primary zone and secondary zone for land use planning and resource protection purposes. Most of West Sacramento is in the secondary zone, while the extreme northern part of the city is outside of any of these Delta planning areas. The study reach described below (1.2.1.8) along the DWSC West Levee is the only portion of the study area within the primary zone. *Note: The WSLIP is consistent with these designations, land use planning, and resource protection for the Delta and this issue is not discussed further in the EIS/EIR.*

1.2.1 WSLIP Study Reaches and Potential Construction Footprint

Building on the general description of the study area, each of the nine reaches in the study area is detailed below. For the environmental analysis of most resources in this EIS/EIR, the potential construction footprint area where proposed improvements and resulting effects would occur is generally a 520-foot-wide corridor along each levee reach, assumed to conservatively include any potential improvements. The reaches and potential construction footprint area are shown in Figure 1-4.

1.2.1.1 Sacramento Bypass Levee

This reach extends along the left bank of the Sacramento Bypass approximately 1.2 miles from the Sacramento Weir in a westerly direction (downstream) to its confluence with the left bank levee of the Yolo Bypass. This reach does not include the training levee that extends in a westerly direction approximately 0.4 mile into the Yolo Bypass (Figure 1-5).

1.2.1.2 Sacramento River North Levee

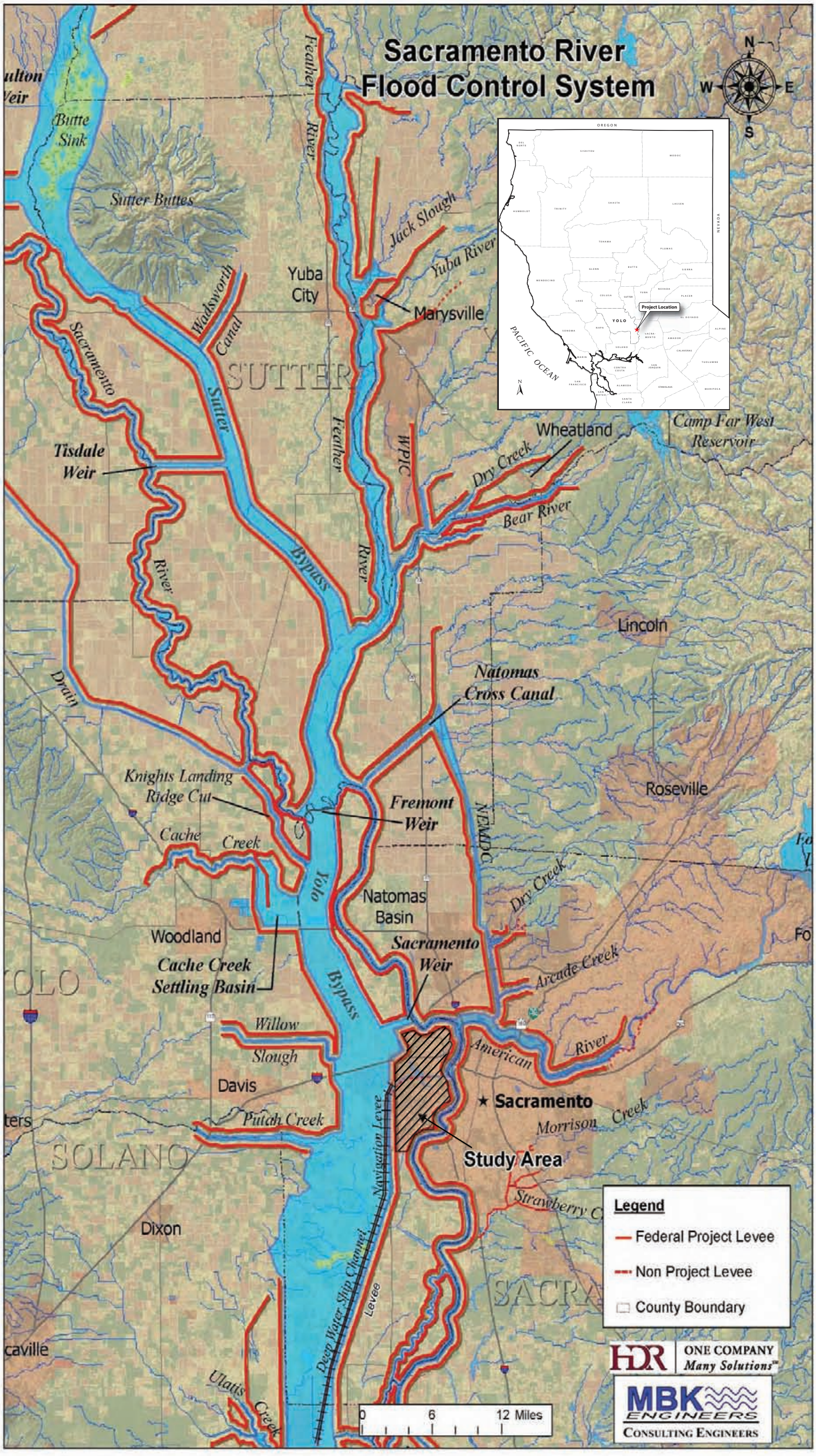
This reach extends along the right bank of the Sacramento River from its confluence with the Sacramento Bypass downstream approximately 6.0 miles to the entrance of the barge canal (Figure 1-6).

1.2.1.3 Sacramento River South Levee

This reach extends along the right bank of the Sacramento River from the entrance of the barge canal downstream approximately 6.4 miles to the South Cross Levee (Figure 1-7).

1.2.1.4 Port North Levee

This reach encompasses the combination of levees, structures, and high ground that exists along the right bank of the barge canal and DWSC from the Sacramento River westward to the levee along the left bank of the Yolo Bypass. This area includes the ground surrounding the Port of West Sacramento's turning basin (Figure 1-8).



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Figure 1-1
Sacramento River Flood Control Project and Regional Setting for the WSLIP Study Area

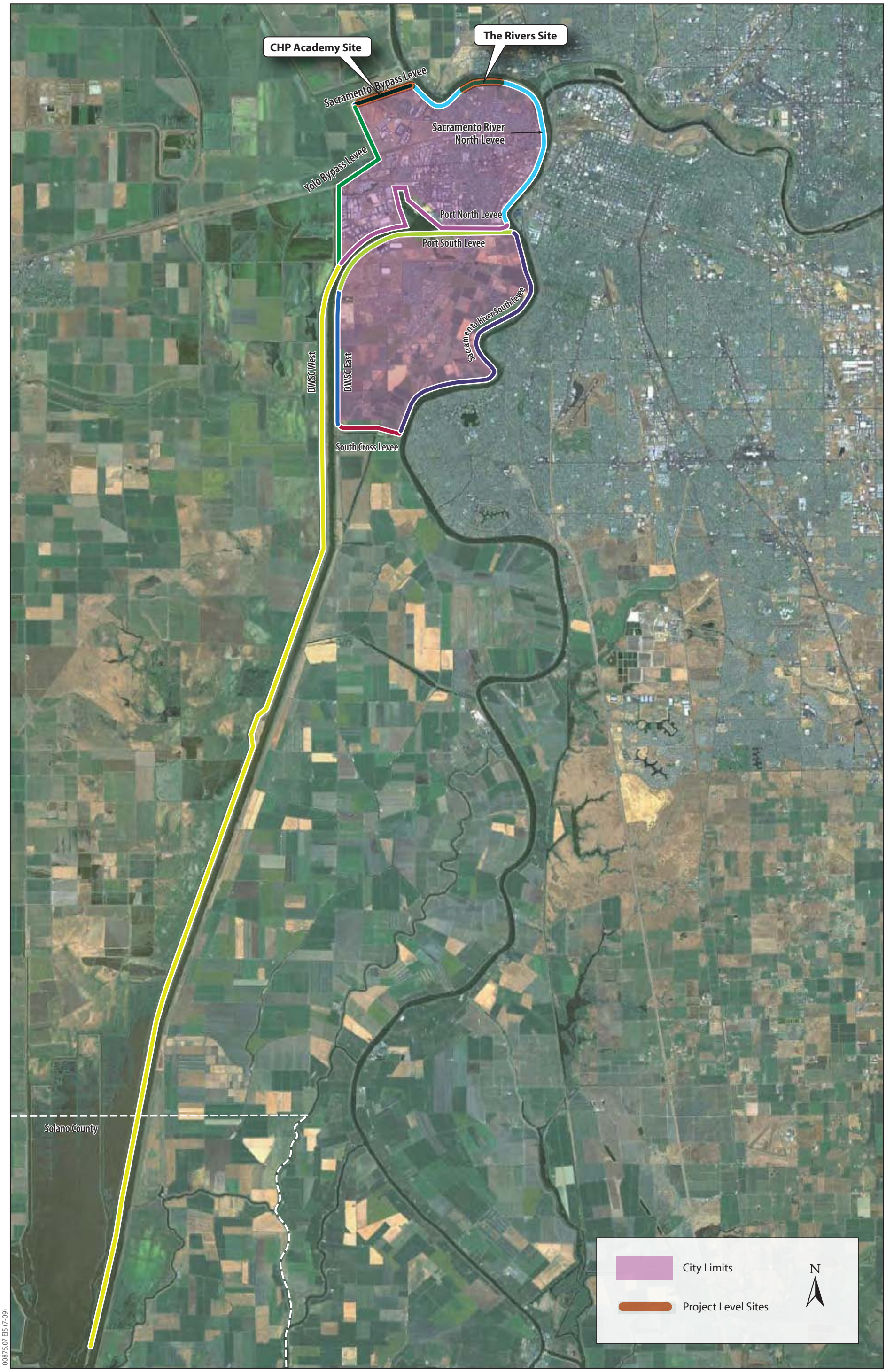


Figure 1-2
WSLIP Study Area

State Plan of Flood Control

Lead Agency: DWR
Location: Central Valley
Goal: Guide flood management expenditures under Propositions 84 & 1E
Timeline: Complete Plan by 2014

Sacramento – San Joaquin River Basins Comprehensive Study

Lead Agency: USACE and DWR
Location: Central Valley
Goal: Flood damage reduction and ecosystem restoration
Phase: Study completed in 2002; laid groundwork for several current efforts, including State Plan of Flood Control

Sutter Basin Project

Lead Agency: USACE and SBFCA
Location: Sutter and Butte counties
Goal: Increase flood protection for communities in Sutter and Butte counties
Phase (Timeline): Feasibility Study and EIS (2011)

Natomas Levee Improvement Program

Lead Agency: SAFCA
Location: Natomas Area, Sacramento
Goal: Achieve 200-year flood protection for the Natomas Basin
Timeline: Construction of 100-year protection by 2011, 200-year protection by 2012

West Sacramento Levee Improvements Project

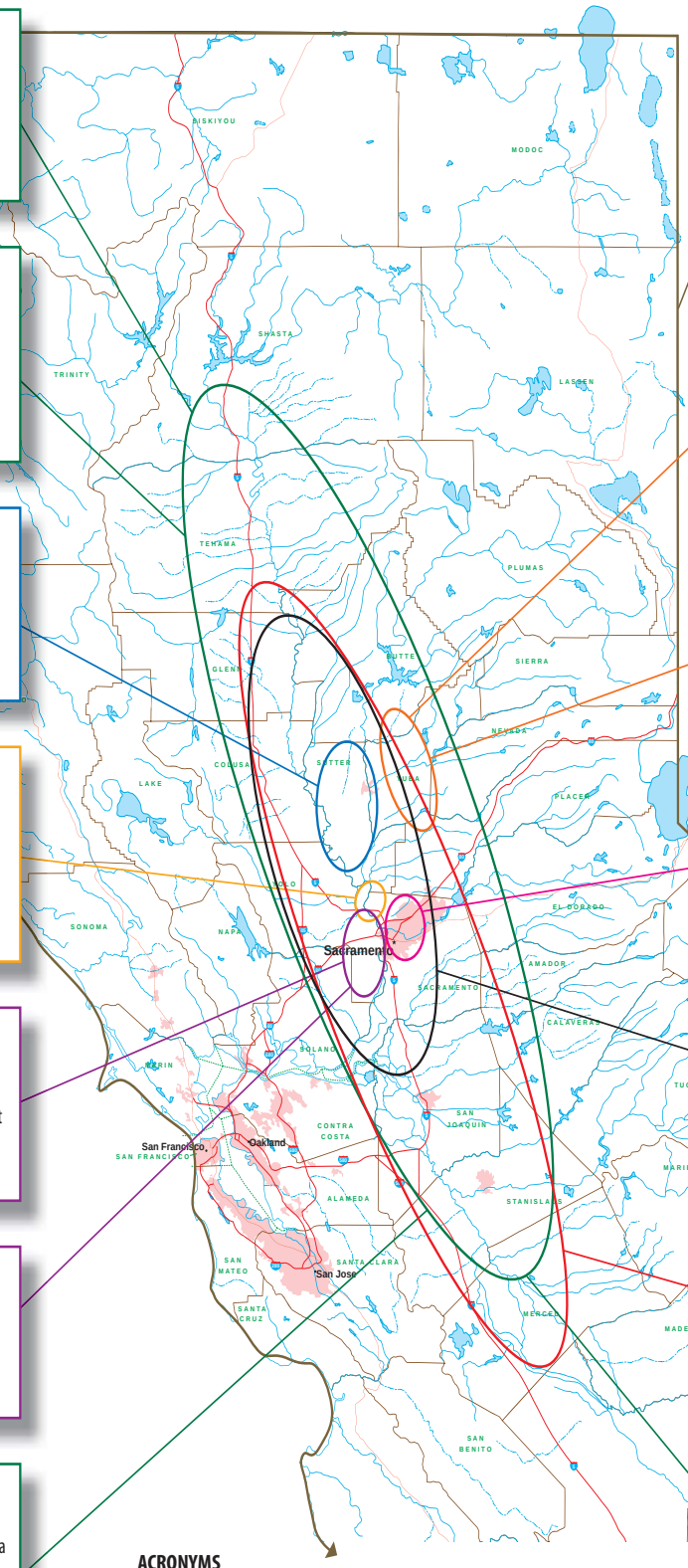
Lead Agency: USACE and WSAFCA
Location: West Sacramento
Goal: Achieve 200-year flood protection for the City of West Sacramento
Phase (Timeline): EIS/EIR (2010)

West Sacramento Project

Lead Agency: WSAFCA, USACE and DWR
Location: West Sacramento
Goal: Comprehensive analysis of the City's levee system
Phase (Timeline): GRR (2012)

Central Valley Flood Protection Plan

Lead Agency: DWR
Location: Central Valley and Sacramento-San Joaquin Delta
Goal: Develop strategies for comprehensive system-wide flood improvements
Timeline: Complete plan by 2012; complete protection measures by 2025



FloodSAFE

Lead Agency: DWR
Location: State-wide, but primarily Central Valley
Definition: Multi-faceted program to improve public safety through integrated flood management.
Timeline: Complete foundational objectives by 2025

Yuba Basin Project

Lead Agency: USACE, DWR and YCWA
Location: Yuba, Feather, Bear rivers Watershed
Goal: Increase flood protection for communities of Linda, Olivehurst, Arboga, Marysville, and unincorporated areas of Yuba County
Phase (Timeline): GRR (2010)

Three Rivers Levee Improvement Authority Projects

Lead Agency: Three Rivers Levee Improvement Authority
Location: Southern Yuba County
Goal: Increase flood protection for communities in southern Yuba County
Phase (Timeline): Construction of 200-year protection by 2010

American River Common Features Project

Lead Agency: USACE, DWR, and SAFCA
Location: Sacramento metropolitan area
Goal: Reduce flood risks for the City of Sacramento
Phase (Timeline): GRR (2010)

Sacramento River Bank Protection Project

Lead Agency: USACE and DWR
Location: SRFCP
Goals: Federal program to correct levee erosion issues
Phase (Timeline): Ongoing Phase II EIS (2011)

PL 84-99 Rehabilitation Assistance of Flood Control Works

Lead Agency: USACE and DWR
Location: Central Valley and Sacramento-San Joaquin Delta
Goals: Federal program to provide emergency levee repairs
Timeline: Ongoing

Levee Collaborative

Lead Agency: USACE and DWR
Location: Central Valley
Goals: Develop short- and long-term plans to achieve system-wide compliance with Corps standards for the State Flood System in the Central Valley
Timeline: Ongoing

ACRONYMS

WSAFCA - West Sacramento Area Flood Control Agency
USACE - U.S. Army Corps of Engineers
SBFCA - Sutter-Butte Flood Control Agency
DWR - Department of Water Resources
SAFCA - Sacramento Area Flood Control Agency
SRFCP - Sacramento River Flood Control Project
YCWA - Yuba County Water Agency

00875.07 EIS (11-09)

Figure 1-3
Major Flood Risk Reduction Efforts in the Sacramento Valley

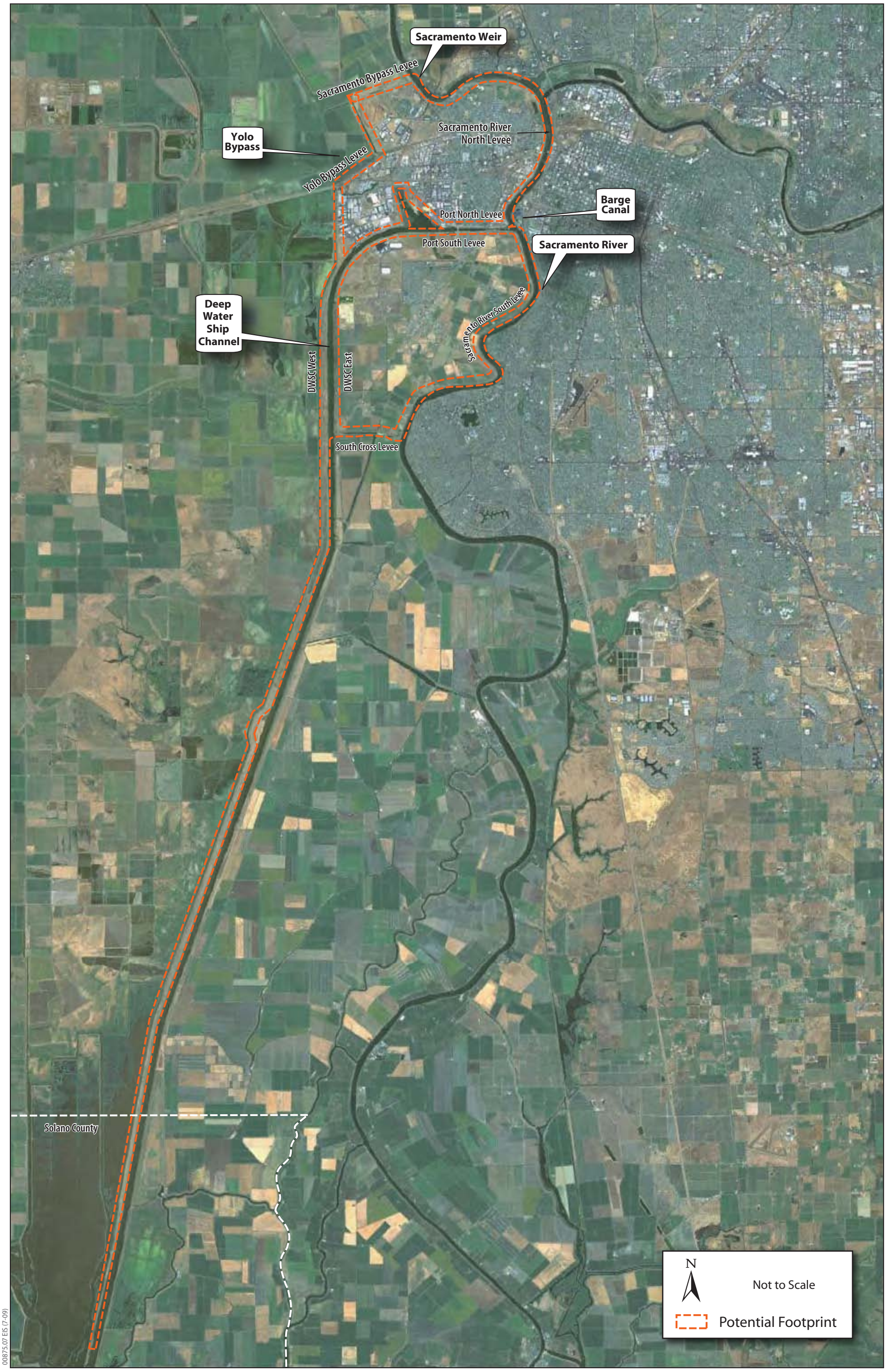


Figure 1-4
WSLIP Potential Construction Footprint



Looking west on the levee crown. Note fence, overhead utility lines, and trees at left, marking the boundary of the CHP Academy facility to the south. Sacramento Bypass is at right, north of the levee. Note concrete liner on the levee slope in right foreground.



Waterside slope of Sacramento Bypass Levee looking northwest. Note mature vegetation on bypass floor along horizon.

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Figure 1-5
Sacramento Bypass Levee



Looking west on the levee crown. Note DWR maintenance yard on horizon at left. Note Riverbank Road at extreme left and mature vegetation at right and on the horizon.



Looking eastward down Rivercrest Drive at The Rivers EIP site. Note vegetation to the right on the waterside, homes on top of the levee crown (Rivercrest Drive), and homes to the left at the landside toe.

00875.07 EIS (7-09)

Figure 1-6
Sacramento River North Levee



Looking south on Sacramento River South Levee with mature vegetation waterside and South River Road to the right.



Landside slope looking north on the Sacramento River South Levee. Note proximity of newly developed subdivision to the west.

00875.07 EIS (7-09)

Figure 1-7
Sacramento River South Levee



Looking north at waterside of Port North Levee. Note Port of West Sacramento industrial facility in the background.



Looking east across the port channel at the waterside of the Port North Levee. Note mature vegetation on waterside of levee.

00875.07 EIS (7-09)

Figure 1-8
Port North Levee

1.2.1.5 Port South Levee

This reach encompasses the combination of levees and high ground that exists along the left bank of the barge canal and DWSC from the Sacramento River westward until it meets the DWSC East Levee on the left bank of the DWSC (Figure 1-9).

1.2.1.6 South Cross Levee

This reach extends for approximately 1.2 miles from the intersection of Jefferson Boulevard and the levee along the left bank of the DWSC to the Sacramento River where it intersects the southern limit of Sacramento River South Levee reach. This levee is the southernmost boundary of the city (Figure 1-10).

1.2.1.7 DWSC East Levee

This reach extends along the left bank of the DWSC channel for approximately 2.8 miles in a southerly direction from the high ground making up the western limit of the Port South Levee reach to the intersection of Jefferson Boulevard with the South Cross Levee (Figure 1-11).

1.2.1.8 DWSC West Levee

This reach extends along the left bank of the Yolo Bypass and the right bank of the DWSC approximately 22 miles in a southerly direction from its intersection with the western limit of the Port North Levee to Miners Slough (Figure 1-12).

1.2.1.9 Yolo Bypass Levee

This reach extends in a southerly direction along the left bank of the Yolo Bypass approximately 3.8 miles from its intersection with the left bank levee of the Sacramento Bypass to its intersection with the DWSC West Levee (Figure 1-13).

1.3 Levee Problems and Flood Management Deficiencies

1.3.1 Overview of Levee Failure Mechanisms and Deficiencies

The City engaged a consultant engineering team, led by HDR, Inc., to prepare a problem identification report to determine the type, location, and severity of deficiencies in the WSAFCA flood management system. A draft report was completed in April 2008. In simple terms, floods typically occur from levee failure mechanisms and deficiencies such as when:

- water overtops a levee (inadequate levee height);
- water moves through the levee structure (through-seepage);
- water moves under the levee structure (under-seepage);
- levee slopes are overly steepened or levees have inadequate substance to resist floodwaters or other forces (slope stability and geometry);

- water carries soil away from the levee slope (erosion); and
- vegetation and other encroachments, such as structures, impede levee operations and maintenance (non-compliant vegetation and levee encroachments).

These failure mechanisms and deficiencies are more fully described below, followed by a table of the deficiencies by reach (Table 1-3). Figure 1-14 illustrates the typical deficiencies.

Note: Additional information on the deficiencies can be found in a problem identification report (PIR) (HDR, Inc. 2008) and an alternatives analysis (HDR, Inc. 2009).The deficiencies and alternatives have been refined and focused through progressive stages in the planning process to form the basis of WSLIP's purpose, need, objectives, and proposed activities that are the foundation of this EIS/EIR; and, therefore, may differ slightly among these documents.

Table 1-3. Summary of Levee Deficiencies by Reach

Study Reach	Inadequate Levee Height	Through-Seepage	Under-Seepage	Slope Stability and Geometry	Erosion	Non-Compliant Vegetation
Sacramento River North Levee	✓	✓	✓	✓	✓	✓
Sacramento River South Levee	✓		✓	✓	✓	✓
Port North Levee	✓			✓		✓
Port South Levee	✓		✓	✓		✓
South Cross Levee	✓	✓	✓	✓		✓
DWSC East Levee		✓	✓	✓	✓	
DWSC West Levee	✓	✓	✓		✓	✓
Yolo Bypass Levee	✓	✓	✓	✓	✓	✓
Sacramento Bypass Levee		✓	✓	✓		

1.3.2 Inadequate Levee Height

Flood management systems are designed to a target level of protection. Determining appropriate levee height is a complex evaluation based on many hydrologic and hydraulic factors, including estimation of the water surface elevation plus a factor of safety above that elevation (also known as freeboard). Another consideration in determining adequate levee height is the contextual relationship of a given levee within the overall flood protection system (i.e., one levee or set of levees cannot be raised to a height such that flows would be directed to flood adjacent or downstream areas). Overtopping is not considered a failure if the event (i.e., target level of protection) to which the levee was designed is exceeded, provided it was constructed and maintained to that design event.

1.3.3 Through-Seepage

Through-seepage occurs when water moves outward from the river channel through the levee cross section (Figure 1-15). The key problem associated with through-seepage is levee breach or collapse, which occurs when the earthen material within the levee is transported by the pressure of the seeping water. Soil piping can occur as the result of seepage. Soil piping is when a hole in a levee becomes exploited by moving water (which naturally seeks the path of least resistance), causing the



Looking southwest from the Port South Levee across the northern spur of Lake Washington. This photo depicts the open space and undeveloped land separating the project area and new suburban development to the south.



Looking west along the Port South Levee. This photo depicts the overall character of this levee reach. Note the high recreation usage, primarily consisting of anglers, and the view of the coastal range (faintly visible at the horizon line).

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Figure 1-9
Port South Levee



Crown of South Cross Levee looking east with mature vegetation visible on waterside of levee.



Landside slope of South Cross Levee with the start of suburban development visible at far left.

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Figure 1-10
South Cross Levee



Crown of DWSC East looking north with DWSC visible to left and homes visible to the upper northeast near the horizon.



Looking south on crown of levee with homes in the Southport community visible on the landside of the levee.

00875.07 EIS (7-09)

Figure 1-11
DWSC East



DWSC West in middleground. Note DWSC East levee in foreground.



DWCS West Levee in middleground, DWSC East Levee in foreground. Note this is just outside the City's limits traveling south on Hwy 84.

00875.07 EIS (7-09)

Figure 1-12
DWSC West



Looking south along Yolo Bypass Levee crown with bypass area to right and industrial facilities visible to the far southeast.

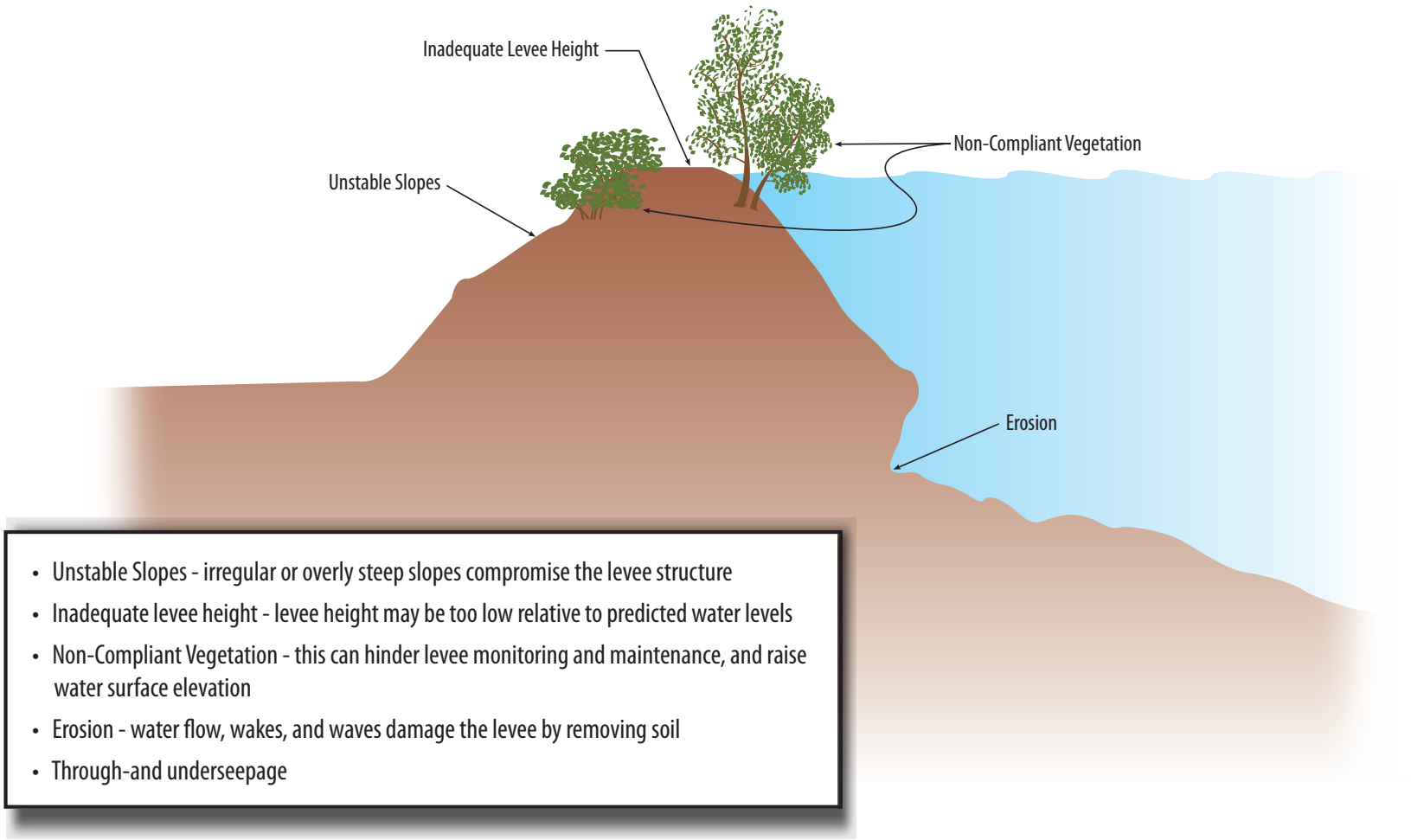


Looking west at landside of Yolo Bypass near Yolo Causeway.

00875.07 EIS (7-09)

Figure 1-13
Yolo Bypass Levee

Typical Levee Deficiencies



- Unstable Slopes - irregular or overly steep slopes compromise the levee structure
- Inadequate levee height - levee height may be too low relative to predicted water levels
- Non-Compliant Vegetation - this can hinder levee monitoring and maintenance, and raise water surface elevation
- Erosion - water flow, wakes, and waves damage the levee by removing soil
- Through-and underseepage

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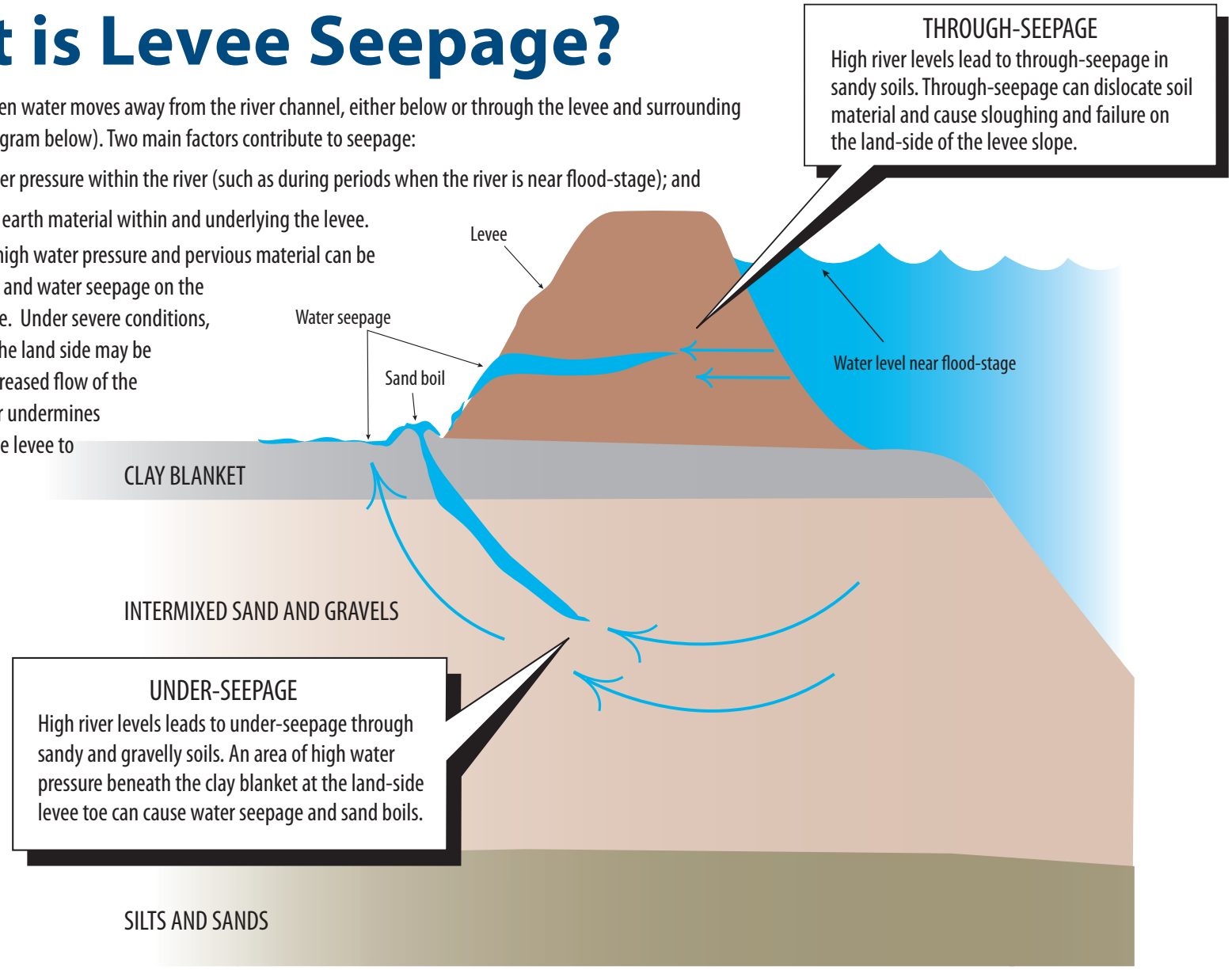
Figure 1-14
Typical Levee Deficiencies

What is Levee Seepage?

Levee seepage is when water moves away from the river channel, either below or through the levee and surrounding land surface (see diagram below). Two main factors contribute to seepage:

- high water pressure within the river (such as during periods when the river is near flood-stage); and
- pervious earth material within and underlying the levee.

The combination of high water pressure and pervious material can be evident in sand boils and water seepage on the land-side of the levee. Under severe conditions, the clay blanket on the land side may be ruptured and the increased flow of the under-seeping water undermines the levee, causing the levee to breach or collapse.



00875.07 EIS\EIR (7-09)

Figure 1-15
Through/Under Seepage

hole to increase rapidly and threaten the levee integrity. Several factors contribute to seepage, including high water pressure (such as during periods of high water in the river or bypass), and pervious earth material (i.e., sandy soils) within or underlying the levee.

1.3.4 Under-Seepage

Similar to through-seepage, under-seepage occurs when water moves outward and downward from the river channel below the levee and surrounding land surface (Figure 1-15). The key problem with under-seepage is when the earth particles which comprise the levee foundation are transported from underneath the levee due to the pressure of the seeping water. This undermining of the levee may result in levee instability or collapse. As with through-seepage, soil piping may occur and cause the levee to breach or collapse, and overall threatens levee integrity. Evidence of under-seepage can often be seen as boils on the land surface on the landward side of the levee. The factors that contribute to under-seepage are the same as those discussed above in through-seepage.

1.3.5 Slope Stability and Geometry

Slope stability is a desirable quality and refers to the resistance of the levee slope to change (landside or waterside). A slope that has an unfavorable horizontal to vertical ratio can be unstable and vulnerable to slipping or sloughing, exacerbated by high flood water elevations. Generally, the approach to determining slope stability can be divided into two categories: steady state and rapid drawdown. Steady state assumes that the flood stage water surface is present for a significant duration, and the presence of water in the levee and the weakening of the levee interior due to through-seepage can cause the landside slope of the levee to slip and wash away. Rapid drawdown also assumes that the flood-stage water surface is present for a significant amount of time, and then is removed quickly as if the river were drained. The water remaining within the levee section weakens the integrity of the levee and when the water surface drops, the waterside slope is vulnerable to slipping and washing away.

Geometry refers to the angle of the slope on both the waterside and landside of the levee as well as the width of levee crown. The USACE guidance regarding geometry has a standard of 3 horizontal feet to 1 vertical foot (or 3H:1V) on the waterside and landside slopes, and a 20-foot-minimum width of levee crown. Levees were evaluated according to USACE's standard for geometry, and those levees that do not meet that standard are considered to be deficient.

1.3.6 Erosion

Erosion is the loss of levee material typically from the force of flowing water, which may be exacerbated by high water velocities, waves, wind action, and boat wake. The high variability in levee soil material, water surface elevation, flow velocities, and ship and boat traffic in local water courses results in commensurate variation in the point at which the levee is at risk (e.g., at lower flows, the levee toe is at risk to erosion; at high flows, the levee face may be at risk).

1.3.7 Non-Compliant Vegetation and Levee Encroachments

Federal project levees, like most of the system protecting West Sacramento, are subject to USACE standards for operations and maintenance. These standards are outlined in general policies and technical publications that universally apply to all Federal project levees and in project-specific

operations and maintenance (O&M) manuals. Recent general guidance from USACE provides greater specificity for the location, type, and degree of vegetation and other encroachments allowable on levees. Under certain circumstances, vegetation and encroachments can exacerbate local erosion, limit the ability to observe levee performance, impair O&M practices, and otherwise affect levee integrity. WSAFCA has established compliance with USACE levee vegetation policies as a goal, and it is understood that projects must comply with USACE levee vegetation policies for Section 408 approval.

1.4 WSLIP Purpose and Need

1.4.1 Purpose, Approach, and Objectives

The purpose of the WSLIP is to achieve a minimum of 200-year flood protection for the entire city by improving the approximately 50 miles of levees protecting West Sacramento. A 200-year flood is a flood that has a 0.5% chance of occurring in any given year, or annual exceedance probability (AEP).

Note: References in this document to level of flood protection (100-year or 200-year) are based on WSAFCA's deterministic approach (the current Federal Emergency Management Agency [FEMA] method). The USACE probabilistic approach is utilized to define system performance for the Section 408 analysis decision. Under either method, the purpose of the project is to substantially reduce the level of flood risk to WSAFCA's service area.

Additional information about defining and understanding flood risk can be found at the official website of the National Flood Insurance Program (NFIP) at: www.floodsmart.gov.

The approach to meet this purpose is to provide a comprehensive evaluation of the entire levee system that protects the city, develop recommended strategies for improvement, and provide a basis for partnerships with Federal and state agencies to implement improvements that meet the flood protection and compatible recreation and open space goals. The objectives under this purpose and approach are to:

- construct levee improvements as soon as possible to reduce flood risk as quickly as possible;
- construct improvements that are politically, socially, economically, and environmentally acceptable;
- provide recreation and open space elements for the city that are compatible with flood improvement actions; and
- ensure continuing Federal assistance for levee repairs and maintenance.

1.4.2 Need for Action

Five needs have been identified for the WSLIP.

- Study results from the comprehensive levee evaluation have shown that the levees protecting the city need improvements to reduce the current level of risk to human health and safety, property, and the adverse economic effect that serious flooding would cause.
- Study results further have shown that the levees in WSAFCA's area are deficient when compared against current Federal standards. Action is needed to bring them up to current

standards in order to maintain eligibility for Federal emergency management assistance. Improvements are necessary to meet the Federal Emergency Management Agency's (FEMA's) minimum acceptable level of flood protection (commonly referred to as the 100-year flood) as specified by the National Flood Insurance Program (NFIP). (HDR, Inc. 2008.)

FEMA's flood risk maps are currently being revised nationwide under a program called RiskMAP (mapping, assessment, and planning). Draft revised FEMA maps show that all or parts of West Sacramento may not meet 100-year flood standards. The WSLIP is intended to incrementally reduce risk to meet or exceed the FEMA standards.

- As required by Senate Bill (SB) 5 (signed by Governor Schwarzenegger in October 2007), the Central Valley Flood Protection Board (CVFPB) must adopt a Central Valley Flood Protection Plan (CVFPP) by July 1, 2012. The CVFPP will require a 200-year level of flood protection for urban areas by the year 2025. Levee improvements are necessary to meet that requirement.
- As a growing community, the City has recreation and open space needs and goals that are unmet. Surrounding waterways represent not only an element of flood risk but also great opportunity for water-based recreation and public open space. Flood protection improvement elements typically underlie or are adjacent to proposed recreation elements that are part of the City's planning documents. There is a need to provide West Sacramento residents with recreation elements that are compatible with flood protection improvements.
- As described in Section 1.2, WSAFCA's area is the downstream-most metropolitan area in the SRFCP. As other projects have been implemented or improvements are being planned to reduce risk and increase flood protection for upstream communities, there is concern that the performance of the SRFCP needs to be evaluated comprehensively to ensure that the individual projects are kept in balance, that effects among the projects are being evaluated, and that risk is not being transferred between communities. The WSLIP represents an important subarea of the SRFCP and merits such study, heightened by West Sacramento's downstream location.

As discussed previously, in light of the flood risk to West Sacramento, WSAFCA is taking proactive measures to reduce risk and improve the level of flood protection for the city. Specifically, the WSLIP and the EIPs under the program are targeted to reduce risk and are proposed in sponsorship by WSAFCA in advance of USACE's project being studied under the West Sacramento GRR. In combination, the WSLIP and actions under the GRR will address the deficiencies and needs discussed above.

To further demonstrate the need for action, details about West Sacramento's flood risk and the consequences of levee failure in West Sacramento are described in the Alternatives chapter (2.4.2.2, Consequences of Levee Failure). Some of the key infrastructure and facilities in West Sacramento that are at risk for flooding are listed in Table 1-4.

Table 1-4. Key Infrastructure and Facilities in West Sacramento

Linear Transportation Facilities	
Interstate 80	Union Pacific Railroad
Highway 50	Sierra Pacific Railroad
Water Supply and Treatment Facilities	
Water Treatment Plant	In-Line Booster Pump Station
Carlin Tank	Central Tank
Northeast Tank	Oak Street
PSIP Tank	Bridgeway Lakes II Tank
Southport Wells	
Sewer Collection Facilities (Pump Stations)	
Bryte	Jefferson
Northport	Industrial
South	Southport
Coke	Triangle
Largo	Bridgeway Island
Allen	Parlin
Storm System Facilities (Pump Stations)	
5th Street	Deerwood
Harbor	Lighthouse
Raley's	Riske Lane
Washington	Jefferson
Government and Quasi-Government Facilities	
U.S. Postal Service regional distribution center	California Highway Patrol (CHP) Academy
Port of West Sacramento	California State Library archive warehouse
City of West Sacramento City Hall	City of West Sacramento Police Station and Service Center
Fire Administration Office and Fire Stations	Public Works Corporation Yard
Petroleum and Agricultural Product Manufacture, Storage, and Distribution	
Shell Equilon	BP/Arco
Kinder Morgan	Ramos Fuel
Agrium	Valley Slurry Seal
Building Material Manufacture and Distribution	
Cemex	Pan Pacific Cement
Certainteed Windows	
Administrative Offices	
California Department of Water Resources	Raley's Grocery Stores headquarters
California Department of General Services	California State Teachers' Retirement System
Healthcare West	

Other Important Commercial Facilities	
Raley's Bakery	McKesson Drug
Greyhound maintenance facility	AT&T corporation yard
United Parcel Service regional distribution center	Pacific Gas & Electric printing facility
Siemens	Keebler Foods
Farmer's Rice Cooperative	MCI Worldcom
Clark Pacific	Netflix
KOVR Channel 13/Channel 31	Flowmaster
Tony's Fine Foods	Nor-Cal Beverage
Sports and Entertainment Facility (and disaster recovery center)	
Raley Field	

1.5 WSLIP Background

The following background provides additional context for the objectives of, purpose of, and need for the WSLIP.

Beginning in 1989, several studies have been conducted by USACE, DWR, and WSAFCA to evaluate the condition of the various levees protecting the city. These studies have indicated that the levee system is deficient and that the consequences of levee failure from a major flood event would be significant. Chapter 2 provides a more detailed explanation of levee deficiencies in the WSLIP area.

Prompted by the studies, WSAFCA in cooperation with other agencies has undertaken several levee repair projects beginning in the early 1990s to quickly and incrementally address urgent levee deficiencies that pose serious flood risk. Detail on these projects is provided below under Local Flood Management History. Many of these repair projects were the result of deficiencies discovered during routine operations and maintenance inspections or during high-water events and repairs were performed on a case-by-case basis.

As a result of knowledge gained from its regional Comprehensive Study (the Sacramento–San Joaquin Rivers Comprehensive Study, also known as the Comp Study) initiated after the 1997 flood, USACE revised its levee criteria regarding through-seepage and under-seepage, problems known to exist within the WSAFCA levee system (U.S. Army Corps of Engineers and The Reclamation Board for the State of California 2002). As part of FEMA's map modernization program, levees must be reevaluated and re-certified using the revised criteria.

WSAFCA's levees have been evaluated according to these latest USACE criteria for stability, seepage, erosion, geometry, and levee height. Data collected from the evaluation show that much of the existing system does not provide protection from the 100-year flood event (the event having a 1% chance of occurring in any given year), the commonly accepted minimum level of flood protection. In addition, an emergency preparedness mapping study analyzed two hypothetical levee failures and determined the rate and depth at which water would flood the city if a levee failure occurred in the studied reaches. This study predicted flooding depths that could exceed 10 feet associated with the 100-year flood event. (HDR, Inc 2008, 2009.)

In July 2006, the City, as part of WSAFCA, decided to take a proactive rather than reactive stance with respect to flood protection. At that time, FEMA was beginning the implementation of a Flood Insurance Rate Map (FIRM) modernization program that could lead to the city being mapped within the 100-year floodplain. This would make flood insurance mandatory for all federally guaranteed loans and restrict development that was expected to bear much of the cost of levee improvements. The city and WSAFCA concluded that it was necessary to perform a comprehensive evaluation of all of the levees protecting the city to determine more definitely its current level of flood protection, determine the magnitude and severity of any deficiencies, and develop recommended strategies for improvement.

In addition to these findings above, several other factors prompted WSAFCA and the City to embark on the WSLIP.

- The CVFPP will require 200-year flood protection for urban areas by the year 2025. The time and effort required to fully evaluate approximately 50 miles of levees, develop recommended strategies for improvement, and implement those improvements prompted action without further delay. In addition, in its General Plan, the City adopted a goal of achieving 200-year flood protection. (City of West Sacramento 2004.)
- The Federal authorization and appropriation process to approve funding and begin evaluation can be lengthy. USACE is in the initial phases of developing the West Sacramento GRR, more fully described later in this chapter (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009). In light of these circumstances, WSAFCA launched the WSLIP in a parallel process with identifying smaller-scale improvements that may be candidates for EIPs to address urgent needs and can be planned and designed in advance of or at the same time with the overall program. See description of Central Valley Flood Protection Act below for further description of EIPs.
- In May 2007, WSAFCA sought a new annual parcel assessment from property owners to raise local funds for levee improvements and repairs. The majority of funding to improve the levees will be obtained through state and Federal assistance; however, local communities are required to pay for a portion of the overall costs. The property owners of the city recognized the flood risks and indicated their willingness to participate in improvements by voting to approve an annual parcel assessment in 2007. This funding source facilitated WSAFCA's advancement of the WSLIP.

1.5.1 Regional Flood Management History

The SRFCP was authorized by Congress in 1917. The SRFCP was the major project for flood control on the Sacramento River and its tributaries (Figure 1-1). It was sponsored locally by The Reclamation Board of the State of California (Reclamation Board, reauthorized in 2007 as the Central Valley Flood Protection Board [CVFPB]) and was the first Federal flood control project constructed outside the Mississippi River Valley. Currently, there are several major flood risk reduction projects being planned or implemented within the SRFCP area (Figure 1-3). Projects relevant to the WSLIP are discussed in further detail under Section 1.6, Related Actions, Programs, and Planning Efforts, below.

Prior to European settlement in the mid-19th century, the floodplain of the Sacramento River in the 150 miles between the city of Redding and the Delta varied from 2 to 30 miles wide and annually covered more than 1 million acres. Low, discontinuous levees were built by individual landowners

from the 1840s to the 1890s. Those levees concentrated floodflows and contributed to problems that were worsened by upstream hydraulic mining in the Sierra Nevada foothills in the late 1800s. With the authorization of the SRFCP, USACE and the State of California began managing the project as a "regional system," constructing improvements to approximately 1,100 miles of levees and creating bypasses and floodways.

Although the flood control structures have been extensively improved and upgraded since construction, the underlying foundation of most of the levees and channels pre-dates any state or USACE involvement and still retains the original materials that include dredged riverbed sands, soil, and organic matter. At the time of the SRFCP authorization in 1917, the areas being protected by the levees were primarily agricultural with minimal improved infrastructure such as railroads and highways. Many of these areas are now heavily urbanized and densely populated, including the city of West Sacramento.

The Federal government maintains oversight but has no ownership of or maintenance responsibilities for the Federal levee system, except for few select features that continue to be owned and operated by USACE. Considering these exceptions, the great majority of levees, channels, and related flood control structures are owned, operated, and maintained by local levee and reclamation districts (at the county and sub-county level) and the State of California. Most of the levee and reclamation districts existed prior to the SRFCP authorization in 1917 and have been carrying out maintenance responsibilities. Today, however, most of the levee districts are substantially underfunded and unable to maintain the system to meet current Federal standards. The Federal government can participate in improvements to the Federal levee system in partnership with a local sponsor (the state and/or levee and reclamation districts). The levees surrounding the city are maintained by RDs 537 and 900 and DWR's Maintenance Area 4.

In recent decades, a number of evaluations of levee conditions, as well as repair and reconstruction efforts, have occurred. Some have been in specific response to damage resulting from particular flood events; others have been in response to general levee deterioration over time and deferred maintenance.

In 1986, 1995, and 1997, there were record flood stages in the Sacramento region. As a result, USACE evaluated the level of flood protection in the study area with updated hydrology and levee analysis. It was determined that the risk of flooding from the Sacramento River and its tributaries ranges from 1 in 25 (25-year) to more than 1 in 100 (100-year) each year (or 4% to 1% probability), depending on the location.

1.5.2 Local Flood Management History, Programs, and Activities

Consistent with much of the Sacramento Valley as described above, the levees protecting West Sacramento were initially constructed in the 1840s to 1890s. They later became part of the SRFCP authorized by Congress in 1917. These levees have been strengthened and maintained through several subsequent projects in partnership between USACE, the State of California, the City, and the agencies that maintain the levees.

As a result of the problems experienced during the 1986 flood, USACE initiated a system-wide evaluation of the levees comprising the SRFCP. Due to the large scale of the evaluation, the review was split into five phases. The first phase of this evaluation included West Sacramento and was

documented through an initial appraisal report entitled *Sacramento Urban Area Levee Reconstruction Project, California* (May 1988). This phase included the review of approximately 110 miles of levee and recommended the repair of 34 miles. (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009.)

The Sacramento Urban Area Levee Reconstruction Project Basis of Design (November 1989) recommended the repair of two reaches of levee protecting the city of West Sacramento. The first repair reach included two relatively small sites along the right bank of the Sacramento River (in the north part of West Sacramento). The second, and more significant, repair reach included approximately six miles of levee along the right bank of the Sacramento River extending from near the barge canal entrance downstream to the southern city limit. Construction began in November 1990 for the installation of berms to improve stability and manage seepage along both reaches. (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009.)

The 1986 flood exposed structural problems and inability of the existing levees to provide critical flood protection to the urban area comprised of the Cities of Sacramento and West Sacramento. As a result, USACE, in cooperation with the State of California, initiated the study documented as the *Sacramento Metropolitan Area, California, Feasibility Report* (also known as the West Sacramento Project). This report was published in February 1992, and indicated the existing flood control system in the study area provided significantly less than a 100-year level of protection. The study went on to recommend a program of improvements which at the time were estimated to provide the city with a 400-year level of protection assuming implementation of a 200-year flood control dam on the American River; however, the recommended plan would provide at least a 150-year level of protection if this American River project element was not implemented. The repairs recommended by the study were authorized in the Water Resources Development Act (WRDA) of 1992 (Public Law [PL] 102-580); however, the 200-year flood control dam on the American River was never authorized by Congress. (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009.)

Recent milestones in the flood management context of West Sacramento include the following activities.

- As described above, in 1992, USACE concluded that the levees along the Sacramento River and Yolo Bypass did not provide protection from a 100-year flood event.
- As described above, in 1993, a flood control project was completed as part of the Sacramento Urban Area Levee Reconstruction Project. This project placed a stability berm and related features to address through-seepage along the entire length of the Sacramento River levee bordering the Southport area (referred to in the WSLIP study area as the Sacramento River South Levee).
- In 1994, the City and reclamation districts formed a Joint Powers Authority, WSAFCA, to coordinate, fund, and construct major flood protection improvements that were beyond the means of the individual entities (City of West Sacramento 2000).
- In 1995, WSAFCA formed an assessment district to fund the local cost share for the West Sacramento Project. This project was part of the Federal Sacramento Metropolitan Area Project authorized by the WRDA of 1996, as described above. The WSAFCA assessment funded geotechnical and engineering investigations of the Sacramento River levees and the southern boundary cross levee in the Southport area (PB 2007). The West Sacramento Project was designed to provide the city with a greater than 200-year level of protection.

- During the 1997 record flood stage event, the levees surrounding the city sustained minor damage. As design work was nearing completion on the West Sacramento Project, under-seepage was noted along the Sacramento Bypass levee.
- In 1998, stability issues became apparent along a levee maintained by RD 537 just north of the Southern Pacific Railroad tracks.
- In 2002, the West Sacramento Project was substantially completed. This project involved raising more than 1 mile of the south levee of the Sacramento Bypass by up to 5 feet and raising 4.5 miles of the Yolo Bypass levee by up to 5.5 feet.
- In 2008, WSAFCA completed an EIP known as the I Street Bridge EIP. This EIP improved a critical section of levee in the redevelopment area along the riverfront of the city to reduce flood risk to public safety, private property, and public infrastructure. The EIP improved a 475-linear-foot reach of the Sacramento River North Levee of the WSLIP study area to address the problems of through- and under-seepage. This EIP and Section 408 action was expeditiously completed by WSAFCA, the State of California, and USACE.

In addition to these activities, the City has enacted other policies and practices that are part of WSAFCA's overall flood management program to address flood risk, some of which are outlined below.

- The City has in place an Emergency Operations Plan, which addresses flood safety through a Flood Plan and Evacuation Plan. To ensure adequacy, conformance with state-of-the-art standards, and to account for growth, the Emergency Operations Plan is reviewed annually and a comprehensive update is conducted every 3 years or more frequently as needed. Based on this review and revision cycle, the Emergency Operations Plan addresses residual flood risk as flood improvements are implemented and as the population and built environment change within WSAFCA's planning area.
- As described previously, in May 2007, property owners in West Sacramento approved a new annual parcel assessment to provide funding for flood improvements, facilitating the WSLIP study.
- Also as of 2007, the City's municipal code (Chapter 15.50) requires new developments to provide 200-year protection or pay into an in-lieu fee program to fund WSAFCA's flood protection efforts.

1.5.3 Local Recreation Needs

The City, as a member agency of WSAFCA, is proposing recreation elements that are compatible with flood improvements to meet recreation needs. For example, the Sacramento River is central to the identity and image of the city, yet opportunities to enjoy it are hampered by lack of safe and accessible public access points. The city is also lacking developed facilities and infrastructure for dedicated off-street bikeways, environmental interpretation and education, fishing, boating, hiking, and other active and passive outdoor recreation experiences. This situation has been heightened by the recent growth of the local population, demographically influenced by young families and individuals oriented toward outdoor recreation.

The *City of West Sacramento Parks Master Plan* (Parks Master Plan) from 2003 identified several key recreation opportunities for the city that will enable its citizens and visitors to enjoy the resources provided by the Sacramento River and other waterways. Some of those opportunities include

utilizing corridors along the Sacramento River, DWSC, turning basin, barge canal, and Yolo and Sacramento Bypasses. These corridors are an opportunity to develop pedestrian and non-motorized linkages that can be used for transportation as well as recreation (SmithGroup JJR 2003).

As part of its Parks Master Plan, the City performed a demand analysis to determine the community's need for certain services. Twelve demands were noted, two of which relate to the City's waterway corridors, summarized below.

- **Improved water access.** Residents value the water resources available in West Sacramento. They desire improved access to water-related recreation such as fishing, boating, swimming, and passive use (e.g., wildlife viewing and hiking).
- **Recreation corridors and trails.** The residents support corridors for bicycling, walking, and horseback riding.

Further substantiating the need for bicycle and pedestrian paths, the 1991 *West Sacramento Bicycle and Pedestrian Path Master Plan* (Callander Associates 1991) and Addendum (City of West Sacramento Parks and Community Services Department 1995) identified opportunities, constraints, and design standards for a citywide network of bicycle and pedestrian paths. The plan also described the City's understanding of these paths as more than a recreational resource; they also encourage bicycling and walking as alternatives to automobile transportation. The Parks Master Plan demand analysis found that the residents support construction of these corridors for bicycling, walking, and horseback riding.

Supported by the demand analysis, the City has established the following goals and objectives.

- Acquire and develop recreation corridors located along watercourses and railroad rights-of-way to link the park system and provide additional recreation opportunities.
- Locate new parks to take advantage of the city's natural resources, including the river and other watercourses.
- Provide improved river access for boating and fishing.
- Develop open space areas to protect significant wetlands and riparian forests, and to provide passive recreation opportunities.
- Facilitate bicycle and pedestrian travel as an alternative to automobile use.

1.6 Related Actions, Programs, and Planning Efforts

This section provides an overview of other flood management activities that comprise the regional planning context for the WSLIP.

1.6.1.1.1 Sacramento Metropolitan Area, California, Feasibility Report (West Sacramento Project)

As introduced earlier in this chapter, the *Sacramento Metropolitan Area, California, Feasibility Report* (also known as the West Sacramento Project) was completed in 1992 and describes the results of studies of flood problems along the Sacramento River and Yolo Bypass from the Sacramento Weir downstream to an area just south of Freeport. The West Sacramento Project included plans for improving flood protection for the city of West Sacramento. The study area is located along the right

bank of the Sacramento River in Yolo County, California. The West Sacramento Project was substantially completed in 2002. The project involved raising more than 1 mile of the south levee of the Sacramento Bypass by up to 5 feet and raising 4.5 miles of the Yolo Bypass levee by up to 5.5 feet. Two deficient sites remain under this project and are scheduled for completion by 2010.

1.6.1.1.2 West Sacramento General Re-Evaluation Report

The original West Sacramento Project of 1992, described above, studied only a small portion of the levees that provide flood protection for the city of West Sacramento. As introduced earlier in this chapter, presently, the USACE and WSAFCA are developing a GRR for West Sacramento levee improvements to assess the entirety of the levees protecting the city of West Sacramento in light of most recent criteria and knowledge regarding levee design.

USACE uses GRRs to present the results of a reevaluation of a previously completed study, using current planning criteria and policies, due to changed conditions and/or assumptions. The results may reaffirm the previous plan, reformulate and modify it, or find that no plan is currently justified. The results are documented in a GRR which, if recommended and supported, also serves as the decision document for a Federal action (U.S. Army Corps of Engineers and Central Valley Flood Protection Board 2009). NEPA analysis for the GRR will be separate from that for the WSLIP, but the processes being closely coordinated for consistency and efficiency.

The primary objective of the West Sacramento GRR is to determine the extent of Federal interest in additionally reducing the flood risk within the study area while concurrently exploring opportunities to increase recreation and restore the ecosystem along the Sacramento River within the study area. USACE anticipates completion of the GRR in 2012.

In regard to the relationship between the WSLIP and the West Sacramento GRR, the WSLIP study area and the GRR study area overlap and the improvements considered may as well. Some improvements evaluated in this EIS/EIR (specifically the EIPs), which would be implemented by WSAFCA, are scheduled to be initiated prior to the GRR authorization, with the expectation that the flood protection improvements that are constructed in advance of any Congressional action on the GRR will be found to be consistent with the recommendations contained in the GRR. On that basis, WSAFCA anticipates that the non-Federal costs incurred in implementation of the WSLIP improvements could be credited against the remaining non-Federal share of the cost of the project studied under the GRR. More specifically, requests for general credit for flood control under Section 104 of the WRDA of 1986 would allow the work conducted by WSAFCA and described in the GRR to be partially credited against the local cost sharing requirements of the West Sacramento Project GRR as long as the project features constructed are compatible with the USACE project. Because implementation of the improvements by WSAFCA does not immediately use Federal funds, it would not result in a commitment of Federal resources that would prejudice selection of a GRR alternative before a final decision on the GRR alternatives is made. In addition, the project-specific improvements considered in this EIS/EIR (the EIPs) are limited to a small portion of the overall flood protection system considered in the GRR. In summary, the WSLIP is being advanced by WSAFCA to facilitate EIPs and a program evaluation that are intended to be consistent and compatible with the ultimate West Sacramento Project GRR.

1.6.1.1.3 Sacramento River Deep Water Ship Channel Project

The Sacramento River Deep Water Ship Channel Project was originally authorized by Congress and implemented by USACE in 1986. The project involved deepening the existing 46.5-mile DWSC from

30 feet to 35 feet and widening portions of the channel to improve navigational efficiency for movement of goods and safety. Construction was initiated in 1989, but work was suspended in 1990 because of a lack of local share funds to match Federal funds and issues related to unresolved infrastructure relocation. A portion of the channel was deepened to the authorized depth of 35 feet. In 2008, USACE, in coordination with the Port of West Sacramento, started the process of conducting a Limited Reevaluation Study and preparing a joint Supplemental Environmental Impact Statement and Subsequent Environmental Impact Report (SEIS/SEIR) to evaluate the action of resuming construction of navigational improvements to the DWSC. USACE anticipates releasing a draft study and SEIS/SEIR to the public in mid-2010. Construction is anticipated to start mid-2011 and be completed in fall 2013. The project is estimated to produce 6.4 million cubic yards of dredged material. The study and SEIS/SEIR will evaluate the feasibility and beneficial use of providing dredged material to local projects.

1.6.1.1.4 Sacramento Weir Sediment Removal Project

DWR removed approximately 38,600 cubic yards of accumulated sediment from the Sacramento Weir approach to restore its flow capacity (ongoing at the time of writing this EIS/EIR). The average depth of sediment removed is 4 feet with depths ranging from 2 to 5 feet along the length of the weir. After the sediment was removed, the invert elevation directly in front of the weir matches the weir apron elevation of 21.27 feet. The area of cut has an average width of 160 feet from the weir apron to the hinge point of the river bank and a length of approximately 2,100 feet (approximately 7.75 acres). The total area of disturbed ground, including in-channel and overbank haul paths and disposal area, is about 19.2 acres. The excavated sediment was placed along the landslide of the south levee of the Sacramento Bypass. The sediment was placed as fill on the existing stability berm on the levee toe. The sediment raised the existing stability berm approximately 6.3 feet for a 1-mile stretch.

1.6.1.1.5 Central Valley Flood Protection Act

The Central Valley Flood Protection Act, enacted in California in 2005, calls for the DWR to develop a CVFPP by January 1, 2012. The CVFPP will outline a comprehensive system-wide approach for the protection of lands currently protected from flooding by the SRFCP and the corresponding San Joaquin River watershed to the south. It also establishes a new standard of 200-year flood protection for urban areas in the Central Valley and requires this standard to be achieved by 2025.

The people of California also passed two bond measures that provide approximately $5 billion toward flood improvements to reduce flood risk, particularly to state-Federal levees protecting urban areas in the Central Valley. These levee improvements are expected to occur over the next 10 years with much of the bond money spent after the year 2012. However, there are urgent needs to improve inadequate flood protection in existing urban areas in advance of the overall comprehensive effort. These advance efforts are termed EIPs. EIPs will be implemented ahead of the comprehensive effort, yet be designed to ensure that they do not eliminate opportunity or prejudice flood risk-management alternatives that would provide regional or system-wide benefits. Local agencies and the state are identifying and planning EIPs in a parallel process to be compatible with comprehensive, system-wide studies.

Along with the requirement for increased flood protection by 2025, one of the objectives of the CVFPP is

increasing the engagement of local agencies willing to participate in flood protection, ensuring a better connection between state flood protection decisions and local land use decisions (Draft Framework for Early Implementation Projects and Section 408 Approval).

In line with that objective, WSAFCA has proposed the WSLIP.

1.6.1.1.6 Natomas Levee Improvements Program

As part of its long-term program to improve the Natomas Basin levee system, the Sacramento Area Flood Control Agency (SAFCA) proposes to continue waterside and landside levee-strengthening efforts, including levee raises, seepage remediation, increased bank protection, levee stabilization, and flattening of landside levee slopes under the Natomas Levee Improvements Program (NLIP), an EIP. These activities were evaluated in the following environmental documents.

- Local Funding Mechanisms for Comprehensive Flood Control Improvements in the Sacramento Area (2007)
- Natomas Levee Improvements Program, Landside Improvements Project (2007)
- Natomas Levee Improvements Program, Bank Protection Project (2007)
- Natomas Levee Improvements Program, Landside Improvements Project- Phase 2 Project (2008)
- Natomas Levee Improvements Program, Landside Phase 3 Levee Improvements Project (2009)
- Natomas Levee Improvements Program, Landside Phase 4a Levee Improvements Project (2009)

Specific elements are described below.

Natomas Levee Improvement Program Landside Improvements Project

SAFCA proposes to provide the Natomas Basin with at least a 100-year level of flood protection by the end of 2010 and ultimately a 200-year level of flood protection. Approximately 26 miles of levees surrounding the Natomas Basin require one or more forms of remediation to address the potential for failure in a 100-year or 200-year flood event. This will require improving conditions along the Natomas Cross Canal South Levee and the Sacramento River East Levee, American River North Levee, Natomas East Main Drain, and the Pleasant Grove Creek Canal. This is a four-phase construction program: Phase 1 occurred in 2008, Phase 2 in 2009, and Phases 3 and 4 are scheduled for 2010.

Natomas Levee Improvement Program Waterside Improvements Project

SAFCA proposes to implement bank protection measures at nine sites along the left bank of the Sacramento River to allow FEMA to certify the levee and to meet SAFCA's 200-year flood protection standard. The project will address erosion and scour, which can threaten levee integrity and ultimately cause levee failure. SAFCA has determined that repair of both moderate and high risk sites is needed to ensure FEMA certification and meet SAFCA standards. Approximately 8,500 linear feet of bankline have been identified for repairs at the nine proposed sites, which are located on the left bank of the Sacramento River between River Mile (RM) 69 (upstream of the confluence with the American River and 2 miles downstream of the Interstate 5 river crossing) and RM 79 (the confluence with the Natomas Cross Canal).

1.6.1.1.7 Sacramento River Flood Control System Evaluation

Following the flood of 1986, USACE and the State of California, along with local partners, completed a comprehensive evaluation of the Sacramento River Flood Control System and initiated a flood risk management program aimed at repairing, raising, and strengthening urban levees, among other activities. This effort, known as the Sacramento River Flood Control System Evaluation (commonly referred to System Evaluation) resulted in the repair of more than 70 miles of deficient levees. However, to date, not all the authorized repairs have been completed. Moreover, the completed repairs were built to less rigorous standards than current standards.

1.6.1.1.8 Sacramento–San Joaquin Rivers Comprehensive Study

Following the 1997 flood, the Sacramento-San Joaquin Comprehensive Study was initiated by the state and USACE to formulate comprehensive plans for flood risk reduction and environmental restoration. This study was unable to stimulate widespread public or political interest in flood risk reduction or environmental restoration activity beyond the ongoing urban levee improvement programs. The study did result in a new set of engineering criteria for the design and evaluation of urban levees and a greatly expanded scope and cost for the ongoing urban levee improvement efforts on the Sacramento and American Rivers. In addition, the adequacy of previous repairs was reviewed.

1.6.1.1.9 American River Common Features Project

To increase flood protection for the city of Sacramento, which is bordered by the left bank of the Sacramento River, the American River Common Features Project (Common Features) was authorized by Congress in the WRDA of 1996. This authorization called for strengthening the north and south levees of the American River and raising and strengthening the upper 12 miles of the left levee of the Sacramento River in the Natomas area, just north of the city of Sacramento. These improvements were considered *common features* of any comprehensive plan of flood protection for the Sacramento area that might ultimately be approved by Congress. In WRDA of 1999, the scope of the Common Features authorization was expanded to include raising portions of the north and south levees of the American River (including the Mayhew Levee), additionally strengthening portions of the north levee of the American River, and raising and strengthening the north and south levees of the Natomas Cross Canal in the Natomas area. In 2006, the Common Features authorization was deemed sufficient to cover improvements to the left levee of the Sacramento River near the Pioneer Reservoir and in the Pocket/Freeport area.

USACE is currently developing two post-authorization change studies. The Common Features GRR is reevaluating the previous Common Features project and identifying levee improvements needed to provide the city of Sacramento and the Natomas area to the north with at least a 200-year level of flood protection. The Natomas Post-Authorization Change Report will document the evaluation of features in the Natomas Basin only. Both are expected to be presented to Congress in 2010.

1.6.1.1.10 Sacramento River Bank Protection Project

USACE is responsible for implementation of the Sacramento River Bank Protection Project (Sac Bank) in conjunction with its non-Federal partner, CVFPB. The SRBPP is a continuing construction project authorized by Section 203 of the Flood Control Act of 1960. The purpose of this project is to provide protection to the existing levee and flood control facilities of the SRFCP. To date, work has been carried out in two phases, with a total of about 820,000 feet of river stabilized under the

project. Phase I consisted of 435,000 feet and Phase II's original authorization included 405,000 feet. Current SRBPP work is being conducted under Phase II of its existing Federal authorization, with approximately 14,000 feet remaining to be constructed in 2009–2010. Projects within the WSAFCA service area are being evaluated under this program.

1.6.1.1.11 Flood Control and Coastal Storm Emergency Act

The Flood Control and Coastal Storm Emergency Act (PL 84-99) authorizes USACE to undertake activities including disaster preparedness, advance measures, emergency operations, rehabilitation of flood control works threatened or destroyed by flood, protection or repair of federally authorized shore protective works threatened or damaged by coastal storms, and provisions of emergency water due to drought or contaminated source. PL 84-99 establishes an emergency fund for emergency response preparations for natural disasters, for flood fighting and rescue operations, and for rehabilitation of flood control and hurricane protection structures. Under PL 84-99, an eligible flood protection system, such as the SRFCP, can be rehabilitated if damaged by a flood event. USACE has the responsibility to coordinate levee repair issues with interested Federal, state, and local agencies following natural disaster events where flood control works are damaged.

The state of California experienced a series of storms affecting federally authorized flood damage reduction projects between December 28, 2006, and January 9, 2007. High water elevations associated with these storms resulted in damage to levees along the Sacramento River and its tributaries. These damages included the development of boils at a site located along the right bank of the Sacramento River in RD 900. This site was located near Davis Road at RM 54.2. USACE, in cooperation with CVFPB, constructed a seepage berm at this site in 2007 under the general authority PL84-99. The 80-foot-wide by 200-foot-long seepage berm, consisting of drain rock encapsulated in geotextile fabric topped with levee fill, was placed at the landside toe of the levee over the area of reported boils.

1.7 Community Outreach, Agency Coordination, and Issues of Known Controversy

1.7.1 Community Outreach

USACE and WSAFCA have established a proactive multi-media outreach program to communicate the WSLIP. The approach to the outreach program has been to go beyond the guidelines and requirements of NEPA and CEQA for public noticing to ensure the affected community and other interested stakeholders are informed, engaged, and involved through an accessible, open, and transparent process. Thus far, the outreach program has included the following actions:

- four scoping meetings for the environmental document (two for the joint NEPA/CEQA document and two prior for CEQA only);
- publication of notices in local newspapers of major circulation;
- publication in the *Federal Register*;
- notification to the State Clearinghouse;
- posting NEPA notices on the USACE website;

- posting CEQA notices and project information on the City/WSAFCA website;
- publication of feature articles in the City Lights newsletter, distributed quarterly to all city residents for updates and information about City business;
- presentation and discussion of the status of the WSLIP at various public meetings for elected boards and commissions;
- direct mailing to residents within proximity of proposed construction activities;
- phone calls to public agencies;
- small-group meetings with interested stakeholders; and
- posting of notices in public places.

As the proposed improvements and EIS/EIR are further developed, the outreach program will continue in a broad sense via the methods listed above and will expand through more targeted specific outreach to residents and businesses who might be more directly affected by construction or operation of the proposed improvements.

To date, the results of the outreach program have been very favorable, constructive, and supportive for the WSLIP. The tone and substance of the input has been consistent with the very favorable response for the voter-approved assessment to fund the local share of the WSLIP. Comments received from the public have been considered to refine the project description and the environmental analysis.

A more detailed accounting of the scoping process is provided in Appendix A.

1.7.2 Agency Consultation and Coordination

1.7.2.1.1 Coordination with other Federal, State, Regional and Local Agencies

The WSLIP has been planned in coordination and cooperation with numerous local, state, and Federal agencies. In Chapter 3, the regulatory setting for each respective resource describes the compliance with applicable Federal, state, regional and local laws and regulations, including consultation to date with various agencies. The following is a summary of those coordination efforts.

Resource Agency Coordination

Over the course of the project planning and environmental review for the WSLIP, WSAFCA and USACE have coordinated informally with the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (DFG).

Throughout 2008 and 2009, coordination has consisted of informal agency meetings, site visits, telephone calls and electronic mails to discuss program effects on habitats and potential avoidance and minimization measures. Information was exchanged to apprise each resource agency of the program status and progress, and to request feedback.

Native American Consultation

In January 2008, the Native American Heritage Commission (NAHC) was contacted to request a search of their Sacred Lands File. The NAHC staff responded in January 2008 with a list of Native

American contacts for both Yolo and Solano Counties and the results of the sacred lands data base research that was negative for findings in the program corridor.

ICF Jones & Stokes staff sent letters to the Native American contacts on the lists provided by NAHC. The correspondence included a map depicting the program corridor, a brief description of the proposed program, and a request for the contacts to share any knowledge or concerns they may have regarding cultural resources in or adjacent to the study area. ICF Jones & Stokes received a letter response dated April 2008 from Mr. Marshall McKay, Tribal Chairman for the Rumsey Band of Wintun Indians. Mr. McKay's letter stated his gratitude for the letter notification about the proposed levee alternatives and that he was not aware of any sites of religious or cultural importance in the program corridor. Mr. McKay also stated that the Rumsey Indian Rancheria of Wintun would like to be notified of any cultural finds unearthed during construction actions.

1.7.2.2 CEQA Responsible and Trustee Agencies

This EIS/EIR will be used by Responsible and Trustee Agencies to determine the effects of the proposed action. Responsible Agencies are those that have a legal responsibility to approve the program or project. These agencies are required to rely on the Lead Agency's environmental document in acting on whatever aspect of the program or project requires their approval but must prepare and issue their own findings regarding the program or project (CEQA Guidelines Section 15096). Trustee Agencies are those that have jurisdiction over certain resources held in trust for the people of California but do not have legal authority over approving or carrying out the program or project. Responsible and Trustee Agencies for the WSLIP are presented in Table 1-5.

Table 1-5. Responsible and Trustee Agencies

Agency	Jurisdiction
Trustee Agency	
California Department of Fish and Game	Fish and wildlife Native plants designated as rare or endangered Game refuges Ecological reserves
State Lands Commission	State-owned "sovereign" lands
Responsible Agency	
California Department of Fish and Game	Fish and wildlife Native plants designated as rare or endangered Game refuges Ecological reserves
Office of Historic Preservation	Historic and cultural resources
Central Valley Flood Protection Board	Levee modifications
California Air Resources Board	Air quality
Regional Water Quality Control Board (#5)	Discharges to water bodies
California Department of Water Resources	State water and flood control interests

1.7.3 Issues of Known or Expected Controversy

NEPA requires that project proponents identify issues of known controversy that have been raised in the scoping process and throughout the development of the project. Thus far, no substantial issues have been discovered through public feedback. However, the following potentially controversial issues are anticipated to arise in the conduct of the environmental analysis process.

1.7.3.1 Construction-Related Effects

As the levee system in the program area is in close proximity to residential areas and other developed land uses, flood improvements proposed under the WSLIP and project-level EIPs are likely to result in construction-related effects. These effects include those under the topics of public safety, noise, traffic, and air quality and are specifically described in Chapter 3, Affected Environment and Environmental Effects. A specific discussion about impacts to residents is addressed under Socioeconomics and Community Effects in3.12, 4.14., and 5.14. This issue is of special concern at The Rivers, where residences will experience access inconveniences and disruption of services.

1.7.3.2 Property Take and Restricted Property Access

A specific subset of construction-related effects involves potential conflicts with private property underlying or near proposed improvements. In some cases there may be temporary property take in the form of construction easements to build the project; permanent take for construction, operations, or maintenance of the project; or temporary restrictions on access to private property. These effects are described under the land use section in Chapter 3, Affected Environment and Environmental Effects.

1.7.3.3 Restriction of Vegetation on Levees

USACE recently published technical guidance and reinforcement of policies restricting woody vegetation on Federal project levees. Implementation of such guidance has stirred controversy in the Sacramento region as cursory assessments have shown that much vegetation may require removal, resulting in effects on fish and wildlife habitat and social values like recreation and aesthetics. The WSLIP would be subject to this guidance. This issue is further described in Chapter 2, Alternatives, and under the effects discussions for vegetation, fish, wildlife, visual resources, and recreation.

1.7.3.4 Climate Change and Sea-Level Rise

Global climate change and resultant sea-level rise are phenomena receiving international attention. These issues are further discussed in the effects discussions in Section 3.2, Flood Control and Geomorphic Conditions, and Section3.6, Air Quality and Climate Change.

Chapter 2
Alternatives

2.1 Introduction

This chapter describes the following elements:

- general information about improvements, including the screening process;
- WSLIP program description for flood and recreation improvements;
- project-level description for two EIPs: CHP Academy EIP and The Rivers EIP (in summary); and
- environmental commitments incorporated into the program and project description to be considered in the environmental analysis for all action alternatives.

2.2 General Information about Alternatives

2.2.1 Approach to Alternatives

NEPA and CEQA generally require that an EIS and EIR (respectively) consider a range of alternatives that would attain most of the basic project purpose, need, and objectives while avoiding or substantially lessening project effects. A range of reasonable alternatives is analyzed to sharply define the issues and provide a clear basis for comparison among the options. The NEPA/CEQA analysis also must include an analysis of a no-action or no-project alternative.

Consistent with NEPA standards, alternatives at the program level are analyzed on an equal, non-preferential basis (i.e., there is no proposed project/preferred alternative) and at an equal level of detail. As required under NEPA and CEQA, a no-action (no-project) alternative has been included to allow comparison of impacts of a range of alternatives including no project implementation.

The alternatives for the program have been developed on a reach-by-reach basis, rather than basin-wide. Because each reach has specific levee deficiencies and each levee deficiency has a number of different treatments that could be used to improve the levee, a reach-by-reach approach allows greater flexibility for project development, analysis, and implementation. In keeping with this approach, the alternative levee treatments are not bundled or packaged but rather are evaluated independently at the program level, allowing for flexible combinability at the project level.

Such flexibility in combining treatments is important to account for variable circumstances and to ultimately assist decision-making for determining the most appropriate treatment(s) based on those circumstances. The circumstances are further subject to change due to the fact that the program would be implemented over many years, and in that time localized flood risk may change, new deficiencies may be identified, new design criteria may be implemented, new treatment measures or construction methods may be developed, or land use and environmental conditions may change.

In describing and analyzing the WSLIP at the program level, the individual flood and recreation improvements function as alternatives in accordance with NEPA and CEQA.

In describing and analyzing the EIPs under the WSLIP at the project level, flood and recreation improvements have been packaged into at least two project alternatives in accordance with NEPA and CEQA.

2.2.2 Alternative Screening Process

The alternative screening process includes a pre-program screen, program-level screen, and project-level screen. Potential levee improvements considered for the WSLIP undergo several stages of screening prior to proposal for action. The pre-program stage of screening is fairly coarse, simple, and qualitative whereas the project-level screening stage is more refined, intricate, and quantitative. This process is summarized below. Improvements that were considered at the pre-program screening stage but not studied in further detail, as well as the program improvements carried forward for consideration in this EIS/EIR are described below after the Alternative Screening Process.

2.2.2.1 Pre-Program Screen

Prior to analysis in the EIS/EIR, certain improvements were screened out based on the following criteria.

- **Geography and jurisdictional authority.** Improvements outside of WSAFCA's and its member agencies' boundaries have been screened out because they are beyond the purview and authority of WSAFCA to implement. There may be exceptions for alternatives proposed outside of WSAFCA's boundaries if mitigation were required for project effects or if downstream modifications were needed to improve flood protection for West Sacramento. While this criterion is an important consideration, no alternative was eliminated solely on this basis (i.e., the alternatives raised other concerns that eliminated them from further analysis notwithstanding WSAFCA's jurisdiction).
- **Ability to meet purpose and objectives.** Alternatives that do not substantially meet the WSLIP purpose and objectives have been screened out. Similarly, alternatives that are not targeted at nor have a direct connection to the WSLIP purpose and objectives have been screened out. As presented in Chapter 1, the purpose of the WSLIP is to achieve a minimum 200-year level of flood protection for the entire city by improving the levees protecting West Sacramento. The program objectives are as follows:
    - construct levee improvements as soon as possible to reduce flood risk as quickly as possible;
    - construct improvements that are politically, socially, and environmentally acceptable;
    - provide recreation and open space elements for the city that are compatible with flood improvement actions; and
    - ensure continuing Federal assistance for levee repairs and maintenance.

  Sub-factors for determining ability to meet the purpose and objectives include long-term reliability, avoidance of indirect effects and unintended consequences, and exorbitantly high or unknown costs.

2.2.2.2 Program-Level Screen

Improvements that passed the pre-program screen are evaluated uniformly against a set of criteria and compared to one another and no action at the program level. The environmental analysis in this EIS/EIR is part of the program-level screen, combined with other planning, engineering, and financial factors. Although the final criteria are subject to change as the WSLIP develops and the process unfolds, the criteria are likely to include the following elements:

- ability to address the flood management problem or levee deficiency;
- avoidance, minimization, and mitigation of environmental effects;
- land use compatibility;
- integration of multi-purpose objectives, such as delivery of recreation features that are compatible with flood improvements;
- cost; and
- public feedback, including that discovered during the EIS/EIR process.

2.2.2.3 Project-Level Screen

Beyond the program level, screening criteria are applied to identify reach-specific improvements. As with the program-level screen, improvements are evaluated uniformly against a set of criteria, are compared to one another and no action, and the environmental analysis in this EIS/EIR is part of the project-level screen. The project-level criteria are focused on determining the most appropriate project proposal based on local context and deficiencies. Ultimately, an applicant-preferred alternative (as determined by WSAFCA) is formulated as informed by the screening criteria. While the final criteria are subject to change as the WSLIP develops and the process unfolds, the criteria are likely to include the following elements:

- ability to meet the project objectives (i.e., address the deficiencies) to reduce risk;
- availability of funds;
- scalability of construction;
- real estate requirements;
- land use compatibility;
- permit requirements;
- environmental constraints;
- integration of multi-purpose objectives, such as delivery of recreation features that are compatible with flood improvements;
- evolving technical policy; and
- public feedback, including that discovered during the EIS/EIR process.

These same criteria were applied to select the I Street Bridge EIP completed in 2008 and would be used for prioritizing future projects, including the project-level EIPs analyzed in this EIS/EIR (see Chapters 4 and 5).

2.3 Program-Level Alternatives Considered but Not Carried Forward

Several alternatives to the WSLIP were considered but not carried forward based on the pre-program screening criteria presented in Section 2.2.2.1. These alternatives are briefly described below.

2.3.1 Reoperation of Upstream Reservoirs

Upstream reservoirs are currently operated to meet a number of different objectives, including water supply, flood management, power production, water quality, and fisheries. Reoperation to optimize attenuation of flood flows could potentially reduce flood risk to WSAFCA, but may compromise the ability to meet other mandated management objectives. Given that many agencies and other stakeholders would need to be involved, it is unlikely that an agreement with respect to reoperation would be reached in the near term, if possible at all to achieve any meaningful benefit to WSAFCA. Therefore, this alternative was eliminated from further analysis due to its uncertainty in meeting the purpose and objectives and due to the authority required beyond WSAFCA's geographic and jurisdictional scope.

2.3.2 Reoperation of Weirs

The elevation and operational criteria for the Fremont Weir, Tisdale Weir, Sacramento Weir, and others determine the flow split between the main stems of the rivers versus flows directed into the bypasses of the SRFCP. While reoperation of certain weirs may reduce water surface elevation in the Sacramento River and therefore reduce flood risk from the river to WSAFCA's area from northeast and east, flow would be increased in the Yolo Bypass and Sacramento Bypass, increasing the risk of failure from the northwest and west from the bypasses. The unintended and negative consequences may extend beyond WSAFCA's area and may transfer risk to other populations. Moreover, this action would essentially re-operate the system on a broad scale, which is not in WSAFCA's authority. Therefore, this action was screened out from further consideration.

2.3.3 Development of Additional Upstream Storage

Similar to reoperation of upstream reservoirs, development of increased capacity for flood water storage within the SRFCP upstream of WSAFCA's area (such as through new reservoirs, enlarged bypasses, and setback levees) presents a possibility for reducing flood risk to the city of West Sacramento. However, likewise with reoperation of upstream reservoirs, WSAFCA does not own or control upstream properties for developing additional storage; therefore, this action has been screened out from further consideration. Further, these actions require system-wide evaluation and may result in negative effects and unintended consequences and are not specifically targeted at WSAFCA's purpose and objectives.

2.3.4 Raising Building Pads

This alternative involves raising building pads to an elevation above the floodplain. However, this action would not meet the purpose and objectives for the following reasons:

- it would not be feasible to raise the building pads of existing structures, and therefore would not protect existing development;
- the area of the city planned for development but not yet built out is too vast to uniformly raise the building pads above the floodplain; and
- flood depths in some parts of the city are too great for raising building pads above the floodplain to be feasible on a large scale.

While it may be possible for existing development to be retrofitted to be flood-proofed or to raise all habitable buildings above the 200-year flood level and for new development to be designed and built to this standard, implementation would require substantial cost, time, and re-evaluation of environmental effects and local permitting, review, and approval processes. This alternative would not substantially meet the program objectives in that it would not reduce flood risk in an expedited fashion for the entire population of the city of West Sacramento due to the fact that construction activities would likely be staged over tens of years, leaving parts of the population at greater risk than others. Furthermore, it would not provide flood protection for all property because non-habitable buildings, streets, and parking lots would not be raised above the 200-year flood level. Further complicating this alternative is that potential flood depths in the some parts of the city are too great to feasibly enable the raising of building pads or structural retrofits. For these reasons, this alternative was eliminated from further consideration.

2.3.5 DWSC Closure Structure and Gated Weir

This alternative proposes to construct a flood barrier structure within the Sacramento DWSC and gated overflow weir structure that would prevent flood flows from proceeding north in the ship channel. The gated weir would be constructed along the DWSC West navigation levee and would divert flood flows from the Yolo Bypass into the DWSC. The closure structure would be operated to prevent flood flows from proceeding north and potentially flood the Port of West Sacramento or the city. While this alternative may provide some degree of flood protection for the city, it would not meet the objective of providing a 200-year level of flood protection because portions of the city would remain susceptible to flooding. In addition, operation of the closure structure and the weir may require reoperation of flood control system components (e.g., the Yolo Bypass or upstream reservoirs) which are outside the purview and authority of WSAFCA to implement. Therefore, this alternative was eliminated from further consideration.

2.4 No Action Alternative

2.4.1 Introduction to No Action

A no action alternative is required pursuant to NEPA, and a no project alternative is required for CEQA (for this EIS/EIR, collectively referred to as the No Action Alternative). The No Action Alternative serves as a benchmark against which the effects and benefits of the action alternatives

are evaluated. The No Action Alternative consists of continuation of current conditions and operation and maintenance practices that reasonably would be expected to occur in the foreseeable future if the WSLIP were not implemented based on current plans and consistent with available infrastructure and community services. This description of the No Action Alternative is intended to serve both the programmatic and project-level analyses.

2.4.2 No Flood Improvements Implemented under the No Action Alternative

Under the No Action Alternative, WSAFCA would not implement flood improvements. The levees protecting the city would continue to require improvements to meet FEMA's minimum acceptable level of flood protection. In addition, the associated risk to human health and safety, property, and the adverse economic impact that serious flooding could cause would continue, and the risk of a catastrophic flood would remain high. Again, however, regular operations and maintenance of the levee system would continue as presently executed by the local maintaining entities.

Because of uncertainties in local, state, and Federal funding; future state and Federal authorization; and other approvals, it is not reasonable to predict construction of levee improvements in the foreseeable future within a reasonable timeframe. Therefore, for the purpose of evaluating impacts under the No Action Alternative, the EIS/EIR assumes no levee repair or strengthening would be implemented, the purpose and objectives would not be met, and flood risk would continue.

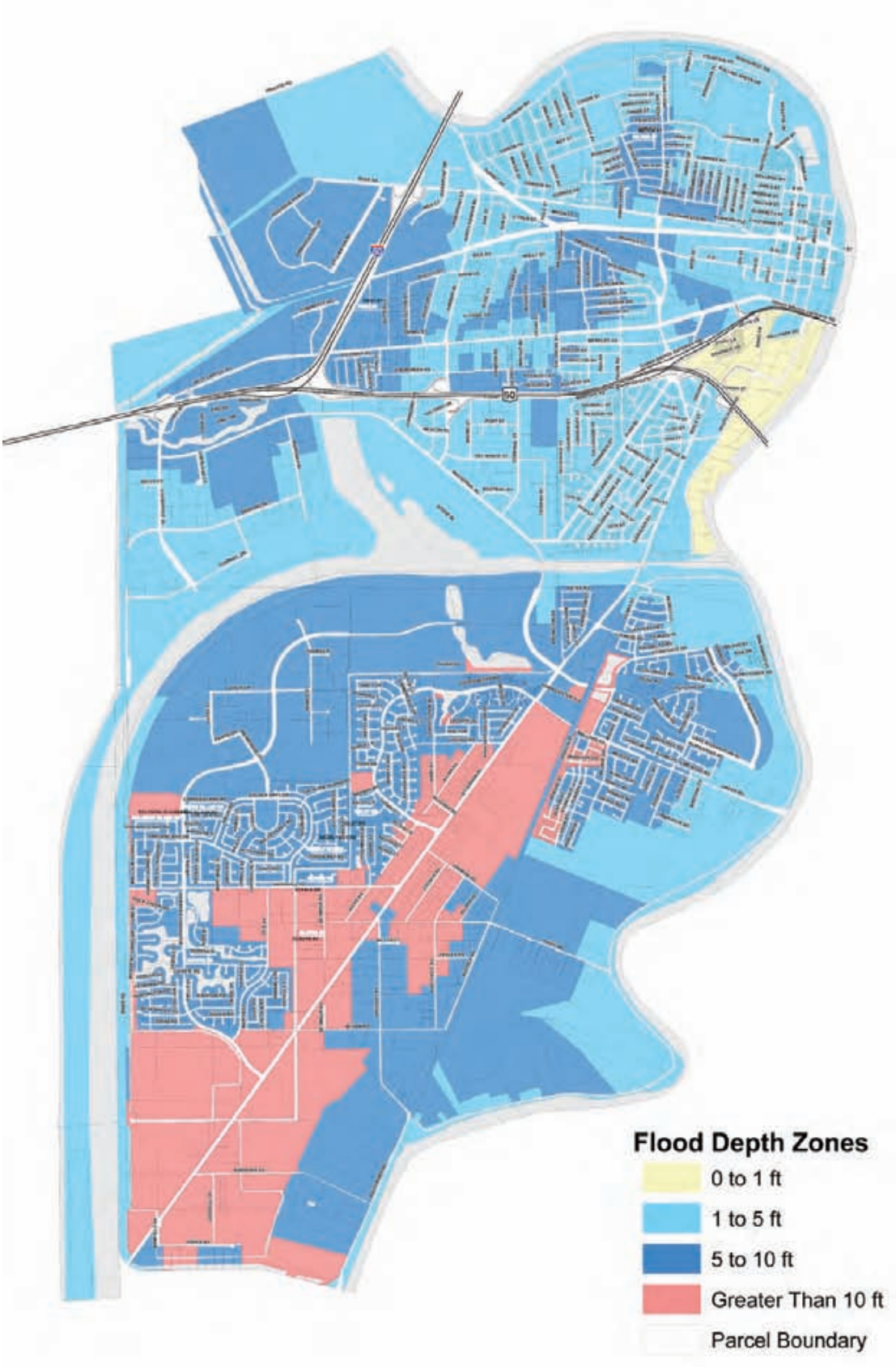
2.4.2.1 Consequences of Levee Failure

Assuming that no levee repair or strengthening would occur under the No Action Alternative means that the West Sacramento levee system would remain or become more susceptible to failure as a result of identified deficiencies such as seepage, erosion, inadequate levee height, and slope instability. These conditions could cause portions of the levee system to fail, triggering widespread flooding, extensive damage to the city's existing residential, commercial, agricultural, and industrial structures, and potential loss of life and property. Extensive damage to utilities, roadways, major interstate transportation corridors, and other infrastructure systems would also likely occur. The magnitude of the flood damage would depend upon the location of the levee breach, severity of the storm, and river flows at the time of a potential levee failure.

Flood depth maps prepared for West Sacramento indicate that under a 100-year flood event scenario, inundation levels would range from 1 foot to 15 feet, depending on the local elevation of the land surface. Figure 2-1 shows the ultimate estimated inundation depths for a 100-year flood event.

In 2006, two hypothetical levee failures were analyzed for West Sacramento utilizing 100-year water surface elevations and hydrology. This analysis was performed to assist the City in its flood emergency preparedness planning. One failure was located in the northern part of the city, on the Sacramento River North Levee, and the other was located in the Southport area, on the Sacramento River South Levee (failure locations are shown in Figures 2-2 and 2-3). (Wood Rodgers 2006.)

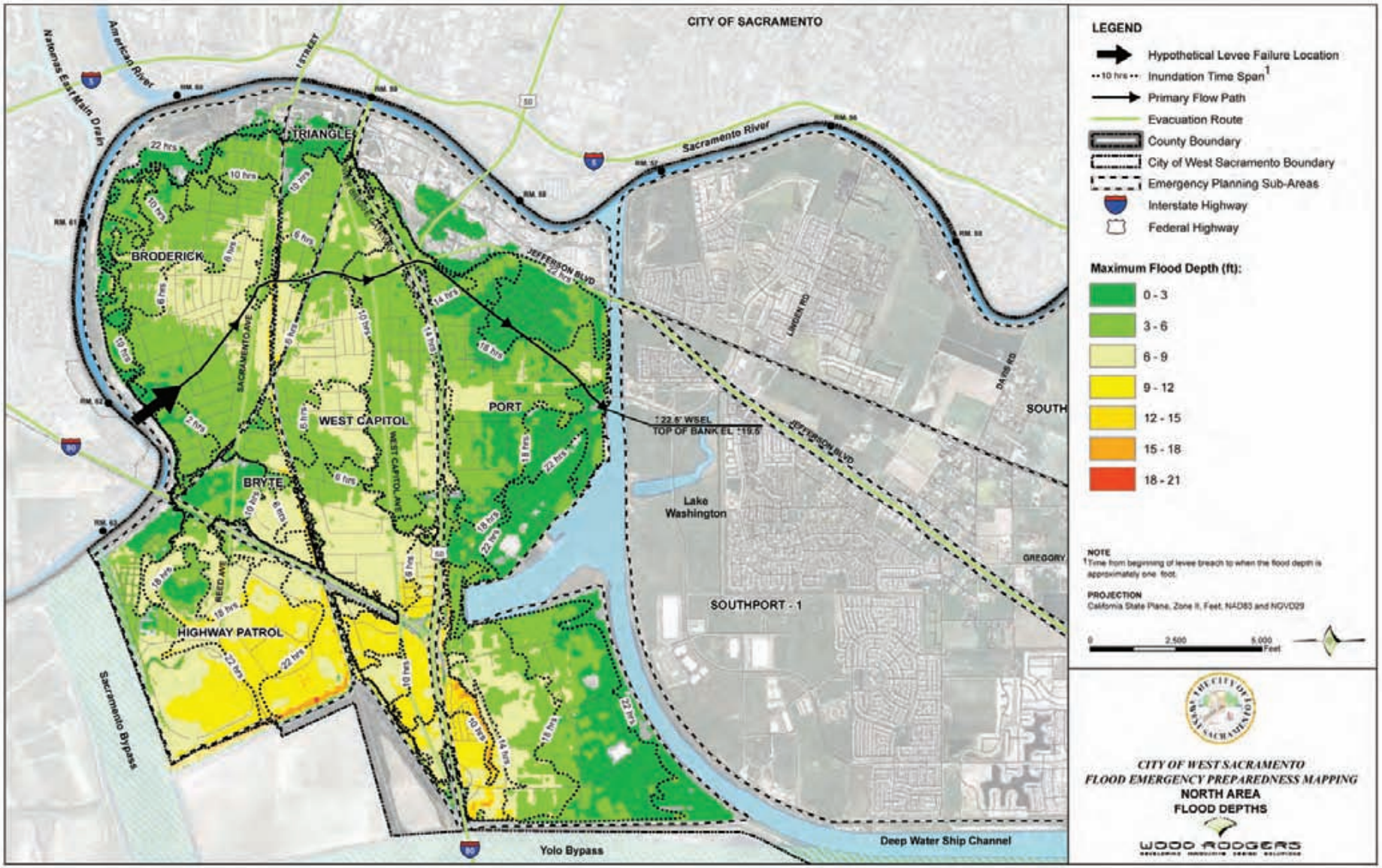
The analysis indicates that a levee failure on the Sacramento River North Levee during a 100-year event would flood the entire north area with at least 1foot of water within 24 hours, at which point vehicular evacuation would become severely limited (a depth of 1 foot is regarded as impassable from the standpoint of vehicular traffic). Certain neighborhoods close to the levee failure would lose



Source: PB, 2007. Final Engineer's Report. Prepared for the City of West Sacramento and the West Sacramento Area Flood Control Agency for parcel assessment purposes. July.

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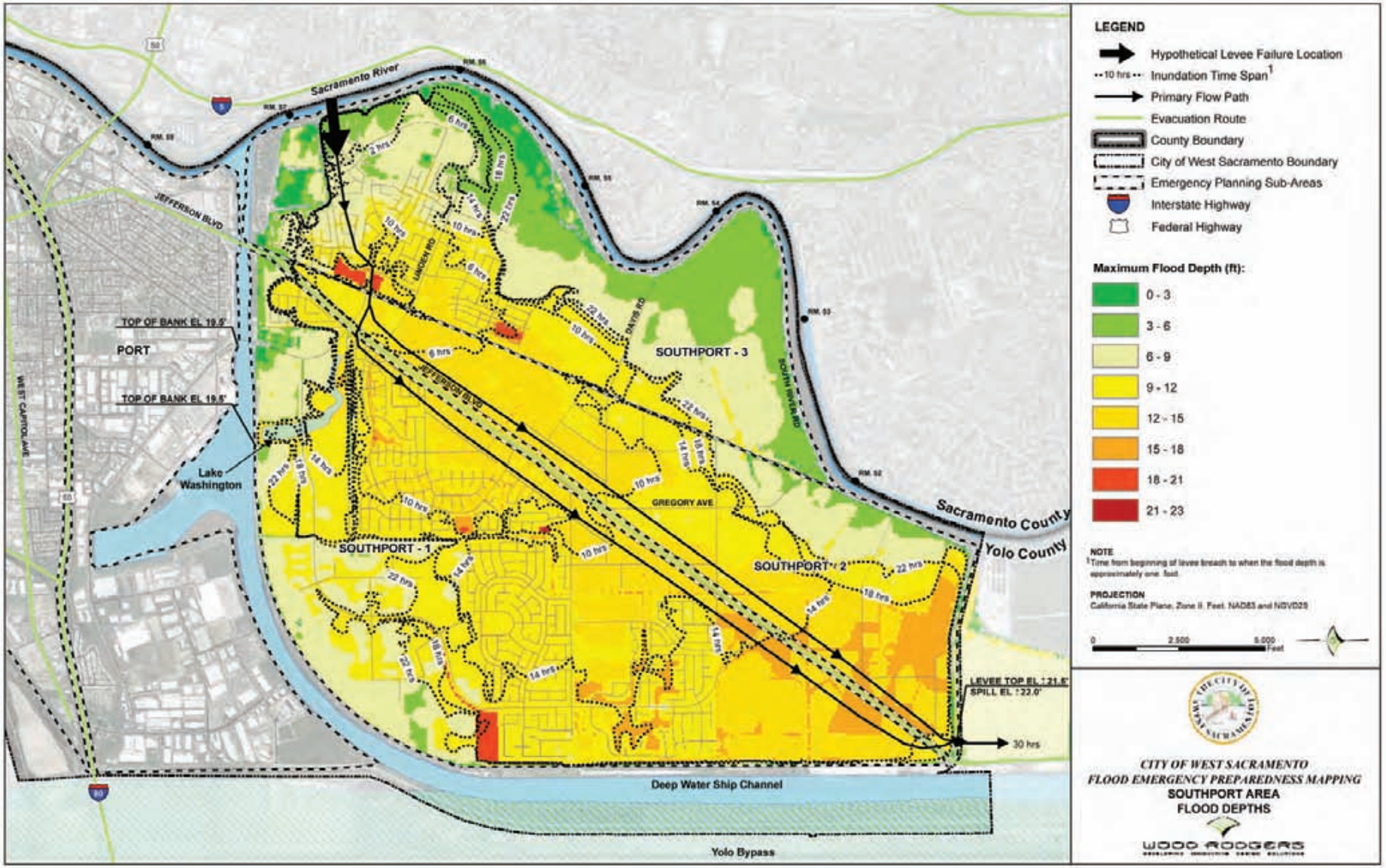
Figure 2-1
100-Year Flood Event
Estimated Flood Depths



Source: Wood Rodgers, 2006. Flood Emergency Preparedness Mapping. Prepared for the City of West Sacramento. November.

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Figure 2-2
100-Year Flood Event
Estimated Time to One-Foot Inundation Depth—North Area



Source: Wood Rodgers, 2006. Flood Emergency Preparedness Mapping. Prepared for the City of West Sacramento. November.

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Figure 2-3
100-Year Flood Event
Estimated Time to One-Foot Inundation Depth—Southport Area

access to evacuation routes within three hours of levee failure. Figure 2-2 shows the estimated time to 1-foot inundation depths throughout the northern area. Within3 days, floodwater depths would reach 3to 10 feet, depending on land surface elevation (as shown in Figure 2-1). Floodwaters would flow from north to south, seeking the lowest topographical elevation, and eventually discharge into the DWSC. The study estimates that floodwaters would begin to spill into the DWSC less than 24 hours after the breach. Modeling indicates that the DWSC could absorb up to 20,000 cubic feet per second (cfs) in discharge flow from waters flooding the north area of the city before overtopping and flooding the Southport area. (Wood Rodgers 2006.)

A levee failure on the Sacramento River South Levee during a 100-year event would flood the entire Southport area with at least 1 foot of water within 24 hours. Jefferson Boulevard, the only vehicular evacuation route for Southport, would be inundated by 1 foot of water within 4 hours, making it impassable. Figure 2-3 shows the estimated time to 1-foot inundation depths throughout the Southport area. Inundation depth could reach 3 feet in 36 hours and 10 feet after three days (Figure 2-1). Floodwaters would flow from east to west, then turn south, collecting at the South Cross Levee. The maximum stage from the floodwater was estimated at elevation 24.57 feet. The elevation at the top of the South Cross Levee is 24.07 feet. If the South Cross Levee were overtopped, further flooding would occur downstream of the city of West Sacramento. (Wood Rodgers 2006.)

Levee failure and subsequent flooding of the city of West Sacramento would affect the entire city, jeopardizing lives, and would cause substantial damage to structures, contents, and other property such as landscaping and automobiles. As of 2005, a population of 40,439 was living in 15,448 housing units within the city (Sacramento Area Council of Governments 2008a and 2008b). All of these residents could be displaced by a catastrophic flood event. Additionally, the city is home to 30,655 jobs (Sacramento Area Council of Governments 2008c), 734 commercial and industrial structures, 46 public structures and 27 park facilities, which would all be affected by a flood event (HDR, Inc. 2009). Environmental and agricultural resources could also sustain major damage in a flood event; 22.6% of the land area within the city is either farmland or open space (City of West Sacramento 2009). If a catastrophic flood event occurred resulting in inundation up to 15 feet, land damages are estimated to be $237,763,648 and structural damages could be up to $1,750,118,102 (PB 2007). These values are based on the 100-year event.

A flood event could cause severe public health hazards as well. Flooding in the city could upset and spread stored hazardous materials, creating hazardous conditions for the public and the environment. Flood damage to homes and other structures could render them dangerous, due to structural damage as well as contamination. Additionally, the floodwaters and ponds left behind could provide a wide breeding ground for mosquitoes and other disease vectors. Effects to the water supply system could be particularly severe in a flood event, and could leave residents and businesses without a reliable water supply for a significant amount of time, as a single break in a water delivery pipe or main could contaminate the entire city's water supply. A major flood event could also result in substantial stress or disruption to the region's emergency response capacity, hospital services, and other critical lifelines of West Sacramento.

During the recovery period after a flood event, West Sacramento residents would require temporary housing, and displacement of many or all occupants would occur while levees, buildings, and other infrastructure were repaired. Businesses, social services, and other employers occupying affected structures would be forced to relocate. The potential number of displaced residents (over 40,000) and businesses (over 30,000 jobs) is so large that the demand for temporary quarters would likely exceed the available supply of vacant buildings surrounding the West Sacramento area. Thus, many

displaced residents and businesses may be forced to relocate to areas a considerable distance from West Sacramento, resulting in substantial intermediate-term and long-term economic impacts on the West Sacramento area and its people. These impacts include changes in employment numbers and patterns, business and personal incomes, tax revenues, and regional economic activity.

A flood event in West Sacramento would also disrupt state and interstate highway, rail, and shipping traffic, causing long-term effects on the region's and the state's economy and ability to move people and goods. West Sacramento has one of the most comprehensive transportation networks on the west coast. Its central geographic location and extensive north-south and east-west highway access has made it a major distribution center. High volumes of truck and passenger traffic pass through the city on Interstate 80 and US-50/Business 80 every day, with truck traffic transporting approximately $63 billion worth of cargo annually through West Sacramento (HDR Engineering 2009). Major transcontinental rail lines passing through the city provide commercial and passenger rail service to all parts of the nation, and the Port of West Sacramento runs domestic and international shipping services (City of West Sacramento 2009). Approximately 9.3 million tons of rail freight valued at approximately $5 billion travels through West Sacramento annually (HDR Engineering 2009). Flooding of this transportation and distribution infrastructure would cut off major statewide and interstate transportation corridors.

Examples of critical facilities for government and commerce in West Sacramento that would be affected by a flood event are the CHP Academy, regional distribution centers for the U.S. Postal Service and United Parcel Service, Raley Field, offices for the California Department of General Services and California State Teachers' Retirement System, the Port of West Sacramento, wastewater treatment facilities, Interstate 80, US-50, and numerous other government and commercial buildings and infrastructure. Other critical facilities and infrastructure are listed in Chapter 1 in Table 1-4.

2.4.2.2 Future State or Federal Action

As these levees have known deficiencies, and if WSAFCA were not pursuing improvements, it is likely that USACE and/or the State of California would repair the levees around the city at some time in the future in order to meet Federal and/or state flood protection obligations associated with the Federal flood control system. The study area of the West Sacramento GRR and the WSLIP are largely overlapping and address the same levee reaches. The primary objective of the GRR is to determine the extent of Federal interest in reducing the flood risk within the study area while exploring opportunities to increase recreation and restore the ecosystem along the Sacramento River. The GRR was initiated in March 2009 and is expected to be presented to Congress for authorization in 2012. The earliest that Federal levee improvements would be constructed under the GRR is 2014.

Based on the criteria used by WSAFCA to screen measures for the WSLIP and EIPs, it can be expected that actions the same as, or very similar to, those proposed and analyzed in this EIS/EIR would be considered through the West Sacramento GRR process and would be implemented by USACE or the state. The environmental effects would in turn be the same as or similar to those as analyzed in this EIS/EIR. The GRR is subject to independent NEPA review.

Despite the likelihood of state- or Federal-led implementation of repairs, for the purpose of evaluating impacts under the No Action Alternative, the EIS/EIR assumes that the improvements would not occur. This assumption provides the most conservative approach for disclosure and comparison of potential effects. Again, as stated above, the No Action Alternative therefore assumes

no levee repair or strengthening would be implemented, the purpose and objectives would not be met, and flood risk would continue.

2.4.3 Relationship of Flood Map Modernization to No Action

Further complicating the future no action scenario is the national flood map modernization process. FEMA is in the process of reevaluating the level of flood protection provided by the levee system protecting the city. The city is currently designated as falling under Zone X, meaning it has less than a 1% chance of flooding in any given year (100-year flood protection). If the city were remapped out of Zone X and into an A, AE, AR, or A-99 Zone, flood insurance would become mandatory for all citizens and businesses that hold federally guaranteed mortgage loans. In addition, Federal and state regulations would prevent or constrain further development in the city, which may further delay levee improvement funding because a flood improvement development fee is incurred for new development.

A change in the flood hazard designation for West Sacramento would interrupt the preferred regional "blueprint" for future growth through 2035 adopted by the Sacramento Area Council of Governments (SACOG) and Valley Vision in 2004. SACOG envisions that West Sacramento would be the fastest growing city in the greater Sacramento region in the coming decades because of its proximity to Sacramento's urban core and its many opportunities for reinvestment. SACOG's blueprint anticipates that more than 40,000 new dwelling units and over 50,000 new jobs will be established in West Sacramento by 2050. With a change in flood hazard designation, these 40,000 new dwelling units and the commercial and industrial developments associated with 50,000 new jobs would need to be redirected to other areas in the region over the next four decades (Sacramento Area Council of Governments 2004).

2.4.4 Levee Vegetation Policy and No Action

While the USACE review and approval process under Section 408 (which this EIS/EIR is part of) is one mechanism for review of WSAFCA's levees relative to recent USACE policy guidance for vegetation on levees, the No Action Alternative would be the same as the WSLIP, meaning the future condition is removal of non-compliant vegetation in any case. The rationale for this position is that WSAFCA would risk Federal de-certification of its levees and would risk ineligibility for Federal assistance if the USACE standards were not complied with, subject to periodic inspection. In light of these risks, it is assumed that WSAFCA's member agencies would ensure compliance in order to avoid de-certification and ineligibility for Federal assistance.

A possible mechanism for compliance with the policy is a variance or exemption authorized by USACE. USACE is developing implementation guidance for variances, and any variance would be subject to USACE approval. Variances have been conceptually discussed among the Interagency Flood Management Collaborative. This group is facilitated by DWR and is a monthly forum among DWR, USACE, USFWS, NMFS, California Department of Fish and Game (DFG), local agencies, and other resource and regulatory agencies to discuss flood management issues with an environmental focus. Subcommittees of this group were specifically formed to discuss the technical issues, policy and guidance, and possible policy variance (either of regional or local scope). At this time no variance is in place and this EIS/EIR analysis assumes no variance would be in place under the No Action Alternative.

2.4.5 Recreation under No Action

The No Action Alternative would also delay implementing elements of the Parks Master Plan, Bicycle and Pedestrian Path Master Plan, and the Sacramento Riverfront Master Plan (SRMP). The recreation corridors proposed in these plans include bike and pedestrian trails that lie on top of the levees and other recreation features that occupy the waterside and landside of the levees. It is possible or even likely that funds would not be expended to construct some or all of these features prior to the levee improvement construction activities.

2.5 Program-Level Alternatives for Levee and Flood Management Deficiencies

For each deficiency described in Chapter 1, a number of improvements or combination of improvements can be used to attain the level of flood protection desired. In some cases, more than one type of improvement can address a particular deficiency. For example, several different improvements can alleviate seepage. Conversely, one improvement may resolve more than one problem (e.g., a setback levee may solve the problems of under-seepage, stability, and erosion). In this case, the improvement is grouped by the primary deficiency it addresses, as noted below:

- levee height (for inadequate levee height),
- seepage control (for through-seepage and under-seepage),
- slope stability/geometry,
- erosion control, and
- other (for improvements that are unique or do not follow grouping conventions by deficiency).

Table 2-1 outlines the six deficiencies and the potential improvements that could be applied to resolve each deficiency; text follows describing in detail each improvement, associated construction methods, and O&M procedures, presented alphabetically in each group. Each improvement is identified in title by:

> "[Flood or Recreation] Program (deficiency addressed if part of Flood Program): [name of improvement]."

Table 2-1. Summary of Levee Improvements and Deficiencies

		Deficiency					
Group	Improvement	Inadequate Levee Height	Through-Seepage	Under-Seepage	Slope Stability and Geometry	Erosion	Non-Compliant Vegetation
Levee Height	Flood wall	✓					
	Levee raise (in place)	✓					
	Levee raise (adjacent)	✓	✓		✓	✓	✓
	Levee raise (full)	✓	✓		✓		
	Closure structure	✓					
Seepage Control	Interior drain		✓				
	Jet grouting		✓	✓			
	Relief wells			✓			
	Seepage berm		✓	✓			
	Sheet pile wall		✓	✓			
	Slurry cutoff wall		✓	✓			
Slope Stability/ Geometry	Slope flattening		✓		✓		
	Stability berm		✓		✓		
Erosion Control	Rock slope protection				✓	✓	
Other	Setback levee	✓	✓		✓	✓	✓
	Vegetation removal						✓

2.5.1 Flood Program Improvements for Levee Height

2.5.1.1 Flood Program (Levee Height): Flood Wall

2.5.1.1.1 Objective

A flood wall is a freestanding concrete barrier located on the levee crown to contain unusually high surface water elevations. A flood wall addresses the levee deficiency of inadequate levee height, especially where the levee footprint is constrained or the prism cannot otherwise be enlarged.

2.5.1.1.2 Design and Construction

Flood walls are constructed of concrete and may be precast or cast in place. The existing levee crown is the working platform (Figure 2-4).

Flood walls are constructed in short spans with solid joints typical of concrete construction. To install a flood wall, the site is prepared by clearing, grubbing, and stripping any vegetation in the work area. The floodwall foundation is prepared by excavating from the waterside hinge point of the levee across its crown to a depth established based on the wall's required height. Prefabricated flood walls are delivered to the site by haul trucks, and the individual pieces of the wall are placed into a prepared foundation by a crane. To install flood walls that are cast at the site, a foundation is excavated, falsework to frame the flood wall is constructed, and concrete is poured into the falsework. After the concrete has cured sufficiently, falsework is removed and hauled away for

disposal. For both methods, excavated soil is used to refill the areas surrounding the flood wall. Any remaining soil could be hauled off site to landfills or used for levee embankment materials in other portions of the WSLIP study area (if it meets levee embankment soil criteria).

The drawback of a flood wall is that it prohibits visual and physical access to or from the waterside of the levee slope, which may inhibit O&M practices.

A complete listing of equipment and materials necessary to construct a flood wall is provided in Table 2-2. Post-construction, areas used for construction staging, the levee slopes, and any other disturbed areas would be hydroseeded.

Table 2-2. Flood Wall Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Prefabricated flood walls
Foundation preparation	Hydraulic excavator	Concrete (if on-site casting)
Falsework construction and cement casting or crane placement of prefabricated walls	Crane	Embankment fill material
Finish grading	Cement mixer	Water (if on-site casting)
Site restoration and demobilization	Bulldozer	Aggregate base rock
	Front end loader	Hydroseed
	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	
	Small compactor	

2.5.1.1.3 Operations and Maintenance

Post-construction, the only permanent facility is the flood wall. The wall would be inspected periodically for structural integrity and sound anchoring. Cleaning or painting may be necessary as surfaces presented by flood walls are often targets for graffiti. O&M for the levee crown, slope, and vegetation may differ from typical practices as access may be inhibited by the wall.

2.5.1.2 Flood Program (Levee Height): In-Place Levee Raise

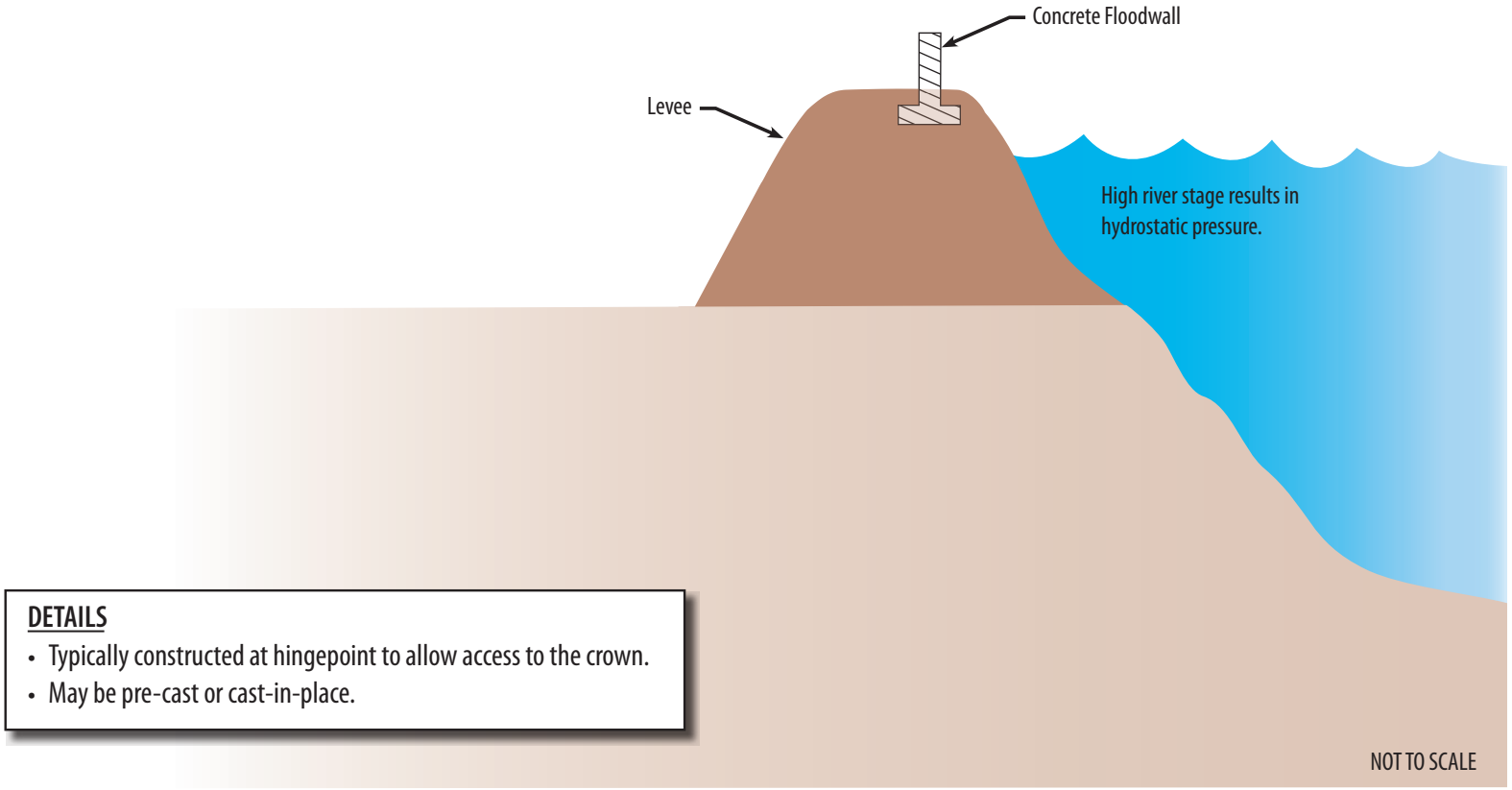
2.5.1.2.1 Objective

An in-place (or crown-only) levee raise adds height to the existing levee without affecting the base footprint. An in-place raise can be constructed if the levee is wide enough to support the placement of additional material while maintaining adequate side slopes together with a 20-foot-minimum crown width. For this treatment, the footprint of the levee remains unchanged. The appropriateness of using an in-place, adjacent, or full levee raise is based on the condition of the existing levee prism and surrounding context and constraints. This treatment is used to address the deficiency of inadequate levee height (Figure 2-5).

Floodwall

Concept:

Additional levee height may be achieved through construction of a concrete wall on the levee crown.



DETAILS

- Typically constructed at hingepoint to allow access to the crown.
- May be pre-cast or cast-in-place.

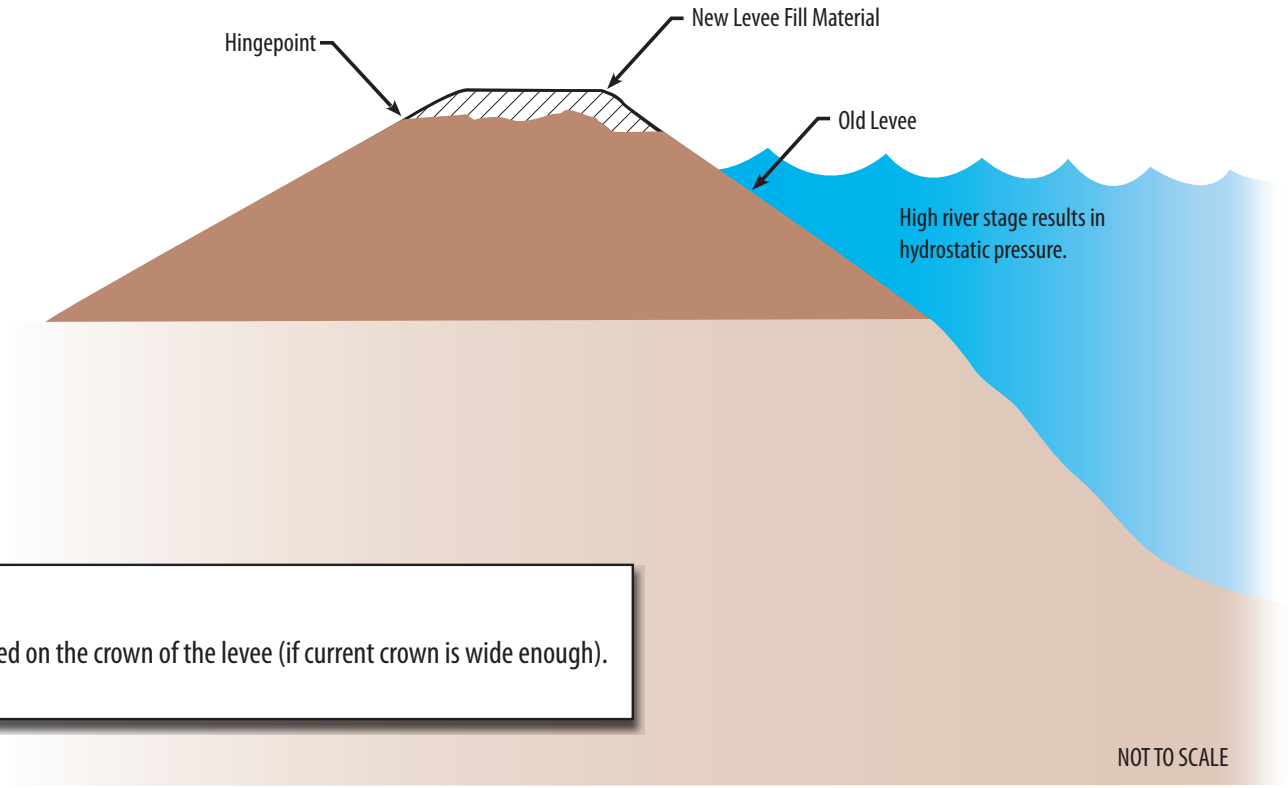
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Figure 2-4
Flood Wall

In-Place Levee Raise

Concept:

Increased flood protection by adding to the crown.



DETAILS

- Material is placed on the crown of the levee (if current crown is wide enough).

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Figure 2-5
In-Place Levee Raise

2.5.1.2.2 Design and Construction

To construct an in-place levee raise, the site is prepared by clearing, grubbing, and stripping. Bulldozers excavate and stockpile borrow material from the borrow site and load it into haul trucks with a front-end loader. Haul trucks transport embankment fill material to the site and dump it. Bulldozers position the embankment fill material along the crown of the levee, and motor graders spread the material evenly. A sheepsfoot roller typically is used to compact the material. Throughout the compaction process, water is distributed over the embankment fill material to ensure proper moisture for compaction. The slope may be track-walked with a dozer.

The levee crown is finished with an aggregate base or paved road, depending on the type and level of access desired. Either condition requires importation of material with dump trucks, placement with a loader and motor grader, and compaction. A paver is required for asphalt placement.

Equipment and materials necessary to construct an in-place levee raise are listed in Table 2-3, below. Post-construction, the levee slopes, areas used for construction staging, and any other disturbed areas are hydroseeded.

Table 2-3. Levee Raise (In-place, Adjacent, or Full)—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Embankment fill material
Material placement and rough grading	Excavator or track hoe	Aggregate base rock
Finish grading	Bulldozer	Hydroseed
Paving (optional)	Front end loader	Asphalt concrete (optional)
Site restoration and demobilization	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	
	Paver (optional)	

2.5.1.2.3 Operations and Maintenance

Post-construction, the only permanent facility is the improved levee, subject to typical O&M. Typical levee O&M in the WSLIP area currently includes the following actions:

- vegetation maintenance up to four times a year by mowing or applying herbicide;
- slope repair, site-specific and as needed, by re-sloping and compacting;
- patrol road reconditioning up to once a year by placing, spreading, grading, and compacting aggregate base or substrate; and
- visual inspection at least monthly, by driving on patrol road on the crown and maintenance roads at the base of the levee.

2.5.1.3 Flood Program (Levee Height): Adjacent Levee Raise

2.5.1.3.1 Objective

Similar to an in-place levee raise, an adjacent raise uses the existing levee as a base on which to build a higher levee with flatter slopes. The adjacent levee raise involves the construction of a new levee embankment adjacent to the existing levee. Whether to use an in-place, adjacent, or full levee raise depends on the condition of the existing levee prism and surrounding context and constraints. This treatment may address the following deficiencies:

- inadequate levee height,
- through-seepage,
- slope stability,
- erosion, and
- non-compliant vegetation.

2.5.1.3.2 Design and Construction

The adjacent raise essentially adds material to increase the cross section of the levee, thereby allowing the levee to be built to a higher elevation while allowing the prescribed 3:1 slopes and 20-foot-wide crown. The adjacent raise is typically on the landward side of the levee (Figure 2-6).

The first construction phase is clearing, grubbing, and stripping the work site and any construction staging areas, if necessary. A trapezoidal trench is cut at the toe of the slope and the levee embankment may be cut in a stair-step fashion to allow the new material to key into the existing material. Bulldozers then excavate and stockpile borrow material from a nearby borrow site. Front-end loaders load haul trucks with the borrow material, and the haul truck subsequently transport it to the adjacent raise levee site. The haul trucks dump the material and dozers spread it evenly. Sheepsfoot rollers compact the material, and water trucks distribute water over the material to ensure proper moisture for compaction. Levee slopes are graded at a 3:1 slope, and the levee crown is at least 20 feet wide. The slope may be track-walked with a dozer.

The levee crown is finished as described under the in-place levee raise.

Post-construction, the levee slopes and any other disturbed areas are hydroseeded.

2.5.1.3.3 Operations and Maintenance

Post-construction, the only permanent facility is the improved levee. O&M would be as described under the in-place levee raise.

2.5.1.4 Flood Program (Levee Height): Full Levee Raise

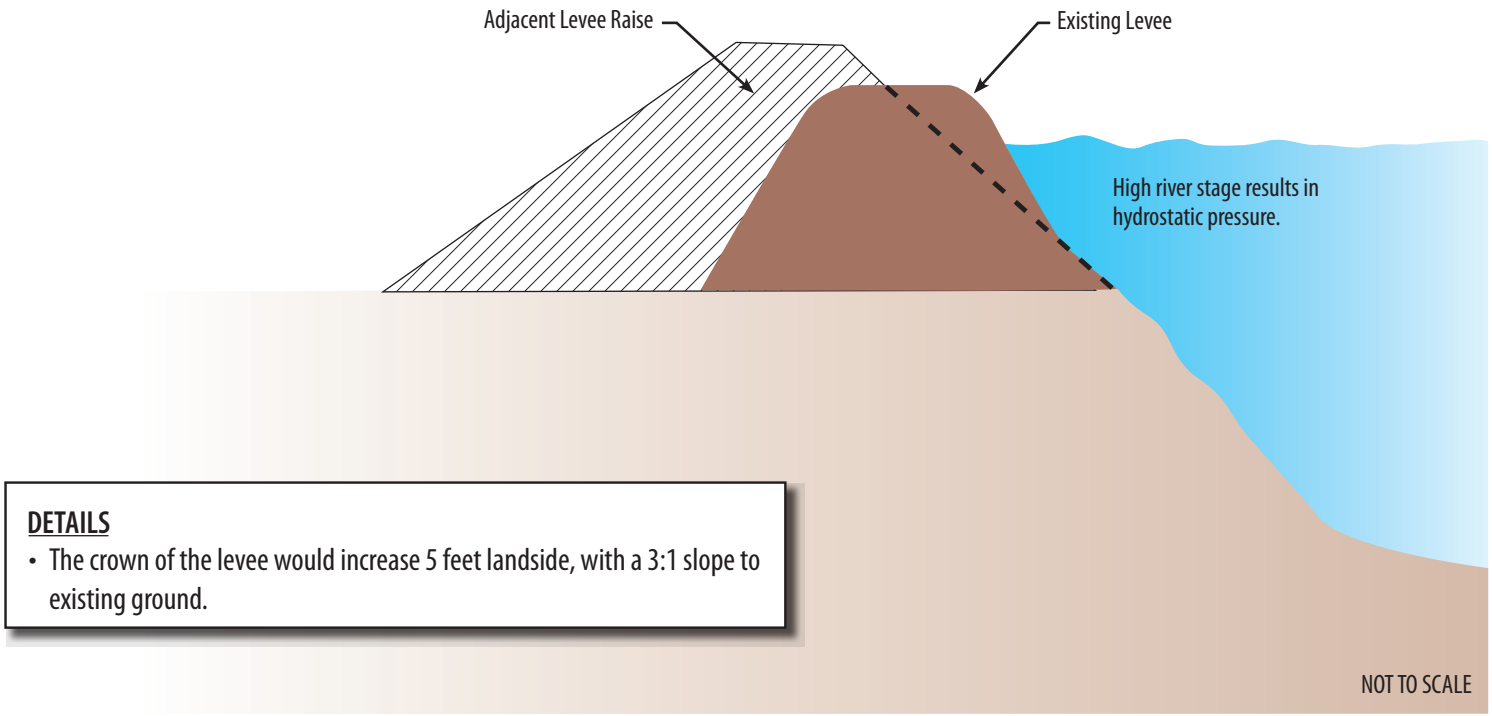
2.5.1.4.1 Objective

If a crown-only raise is not possible, additional height may be added to the levee by implementing a full levee raise. A full levee raise can occur on the landside, waterside, or both sides of the levee (Figure 2-7) depending on site constraints and levee conditions. Whether to use an in-place,

Adjacent Levee Raise

Concept:

A new embankment strengthens the existing levee and enlarges the slopes.



DETAILS

- The crown of the levee would increase 5 feet landside, with a 3:1 slope to existing ground.

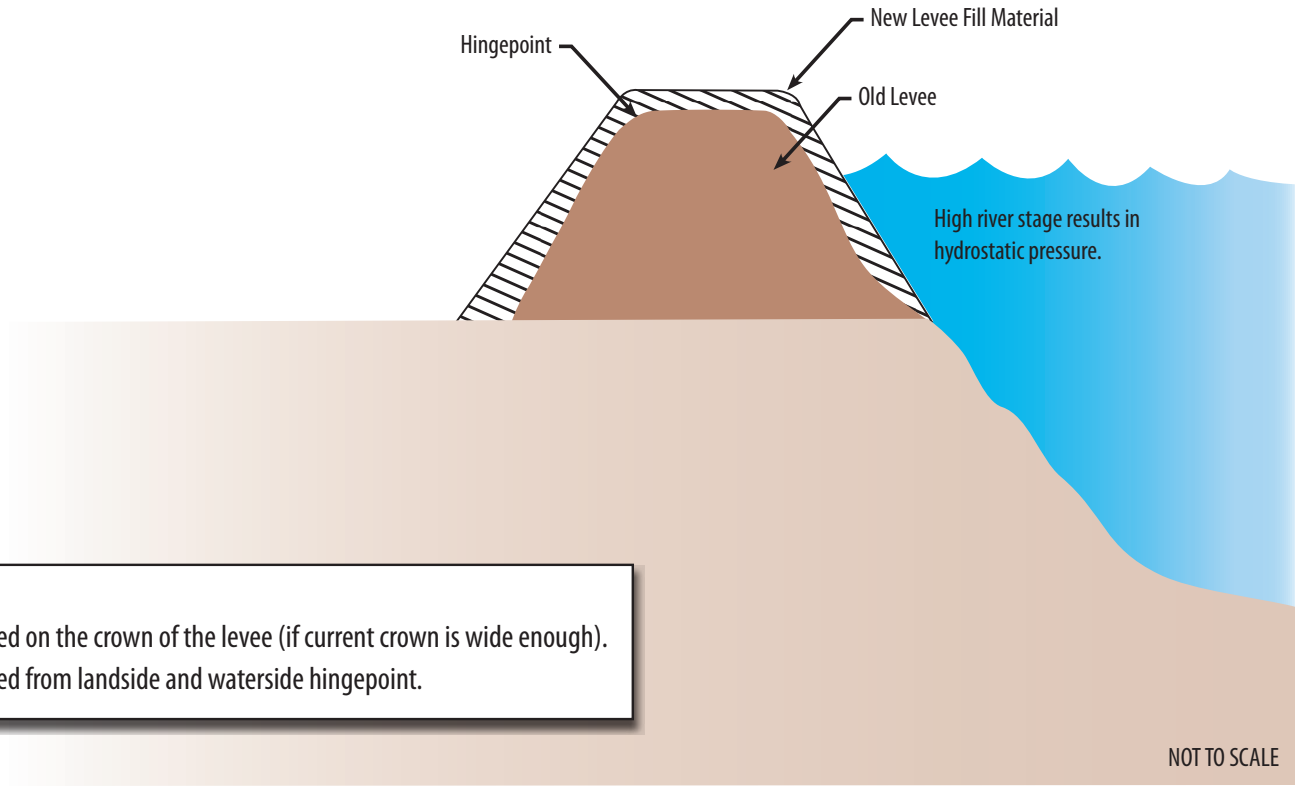
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Figure 2-6
Adjacent Levee Raise

Full Levee Raise

Concept:

Flood protection is increased by adding material to crown and levee slope (land or water side).



DETAILS

- Material is placed on the crown of the levee (if current crown is wide enough).
- Material is placed from landside and waterside hingepoint.

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Figure 2-7
Full Levee Raise

adjacent, or full levee raise depends on the condition of the existing levee prism and surrounding context and constraints. This treatment is used to address the following deficiencies:

- inadequate levee height,
- through-seepage,
- slope stability, and
- erosion.

2.5.1.4.2 Design and Construction

A full levee raise is similar to that described under adjacent levee raise but would affect both slopes of the levee.

Equipment and materials necessary for the full levee raise are listed in Table 2-4. Post-construction, the levee slopes, construction staging areas, and any other disturbed areas are hydroseeded.

2.5.1.4.3 Operations and Maintenance

Post-construction, the only permanent facility is the improved levee. O&M would be as described under the in-place levee raise.

2.5.1.5 Flood Program (Levee Height): Closure Structure

2.5.1.5.1 Objective

A closure structure is a device to bridge a gap along the profile of the levee crown, such as where a road or railroad intersects a levee below the elevation of the levee crown. Common closure structures are stop logs and flood gates. A stop-log device involves concrete headwalls placed in the levee cross section on both sides of the gap, allowing the gap to be closed with removable concrete panels (commonly referred to as *stop logs*). The stop logs are held in place by fitting into a channel in the headwalls. A flood gate is similar to stop logs except the gap would be closed with hinged panels attached to the headwall. Stop logs are analyzed for the purposes of this document because the construction, operations, and maintenance are more involved than flood gates, as are their respective impacts. A closure structure addresses the levee deficiency of inadequate levee height.

2.5.1.5.2 Design and Construction

Clearing, grubbing, and stripping occur approximately 5 feet on either side of the proposed closure structure footprint. A trench the length and width of the structure is dug with a trencher or track hoe. I-beams are placed in concrete in the trench to provide a foundation channel to hold the bottom stop log. The stop logs are fabricated before delivery to the site and stored on site for immediate availability in the event of a flood or unusual high water event. A storage area approximately 30 feet long and 3 feet wide is cleared nearby to house the stop logs when not in use. A listing of phases and equipment and materials necessary to construct a closure structure is provided in Table 2-4.

Table 2-4. Closure Structure Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Prefabricated concrete panels
Trench excavation	Trench excavator	Concrete for headwalls and closure foundation
I beam placement	Crane	Hydroseed
Storage area construction	Sheepsfoot roller	
Finish grading	Water truck	
Site restoration and demobilization	Small compactor	

2.5.1.5.3 Operation and Maintenance

A crane would be transported to the site to install stop logs when necessary. Stop logs are removed from storage and put into place until the high-water event subsides. The closure structure would be inspected periodically to ensure it is in good working order. Cleaning or painting may be necessary as surfaces of closure structures are often targets for graffiti.

2.5.2 Flood Program Improvements for Seepage Control

2.5.2.1 Flood Program (Seepage Control): Interior Drain

2.5.2.1.1 Objective

An interior drain is a layer of drain rock encased in filter fabric or filter sand that is placed on the landside one-third of the levee prism and extends roughly 15 feet into the levee foundation. The rock provides a pervious pathway to allow and control the flow of seepage in the levee (Figure 2-8). An interior drain addresses the deficiency of through-seepage.

2.5.2.1.2 Design and Construction

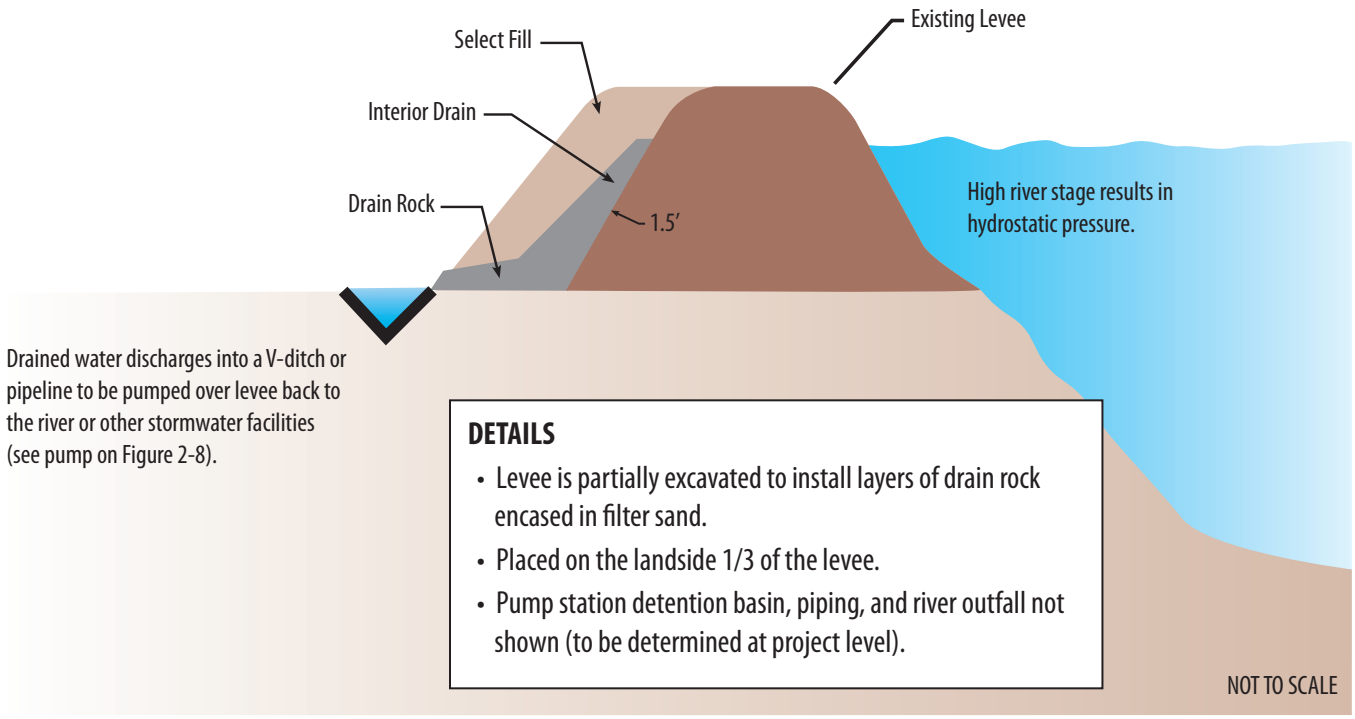
To install an interior drain, the site is prepared by clearing, grubbing, and stripping the drain site and the work area. The levee then is partially excavated and a 1.5-foot-thick base layer of drain rock is placed at the levee toe, extending roughly 15 feet into the levee foundation. An additional drain layer, approximately 1.5 feet thick, runs upward and into the core of the levee at a 2H:1V slope from the end of the base layer to the approximate elevation of the design flood. A layer of geotextile material is placed over the additional drain layer, and imported embankment fill material is placed on top of the drain layer to rebuild the levee. A drainage canal is excavated at the landside levee toe to capture the water and direct it to a pump station or detention basin.

Post-construction, areas used for construction staging, the levee slope, and any other disturbed areas are hydroseeded. A listing of equipment and materials necessary to construct an interior drain is provided in Table 2-5.

Interior Drain

Concept:

Capture any through-seepage and direct it away from the face of the levee.



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Figure 2-8
Interior Drain

Table 2-5. Interior Drain Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Drain rock
Excavation and rock placement	Excavator or track hoe	Geotextile material
	Bulldozer	Embankment fill material
Finish grading	Front end loader	Aggregate base rock
Site restoration and demobilization	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	

2.5.2.1.3 Operation and Maintenance

The only post-construction permanent facility is the interior drain. Maintenance needs would involve regular inspection and repair as needed to keep the discharge point of the drain clear and flowing freely.

2.5.2.2 Flood Program (Seepage Control): Jet Grouting

2.5.2.2.1 Objective

Jet grouting involves injecting fluids or binders into the soil at very high pressure. The injected fluid can be grout; grout and air; or grout, air, and water. Jet grouting breaks up soil and, with the aid of a binder, forms a homogenous mass that solidifies over time to create a mass of low permeability (Figure 2-9). Jet grouting typically is used in constructing a slurry cutoff wall (described later in this chapter) to access areas other methods cannot. In this regard, it is typically a spot application rather than a treatment to be applied on a large scale along an entire reach. Jet grouting addresses the deficiency of seepage (through- or under-seepage).

2.5.2.2.2 Design and Construction

Equipment required for jet grouting consists of a drill rig fitted with a special drill string; a high pressure, high flow pump; and an efficient batching plant with sufficient capacity for the required amount of grout and water. The high-pressure pump conveys the grout, air, and/or water through the drill string to a set of nozzles located just above the drill bit. The diameter of the jet grout column is dependent on site specific variables such as soil conditions, grout mix, nozzle diameter, rotation speed, withdrawal rate, and grout pressure. Jet grouted columns range from one- to sixteen- feet in diameter and are typically interconnected to form cutoff barriers or structural sections. One construction crew, consisting of a site supervisor, pump operator, batch plant operator, chuck tender, and driller under ideal conditions, can construct two six-foot diameter, fifty foot columns per day consisting of approximately 100 cubic yards of grout injected per 8 hour shift. Ideal conditions would be characterized by no technical issues occurring at either the batch plant or the drilling site, such as loss of fluid pressure, breakdown of equipment, or subsurface obstructions to drilling operations.

To initiate jet grouting, a borehole is drilled through the levee crown and foundation to the required depth (to a maximum depth of approximately 130 feet) by rotary or rotary-percussive methods

using water, compressed air, bentonite, or a binder as the flushing medium. When the required depth is reached, the grout is injected at a very high pressure as the drill string is rotated and slowly withdrawn. Rotation speeds range between 10 and 30 rpm and the withdrawal rates vary between 2 and 12 inches per minute. Use of the double, triple, and superjet systems create eroded spoil materials that are expelled out of the top of the borehole. The spoil material contains significant grout content and is frequently used as a construction fill.

To provide a wide enough working platform on the levee crown, the upper portion of some segments of the levee may require degradation with a paddle wheel scrapper. Material is scraped and stockpiled at a nearby stockpile area. Hauling at the work area involves scraper runs along the levee to the staging area and grout, bentonite, and water deliveries to the batch plant.

Batch plants are typically centrally located to the injection site, with pipelines for mixed grout that run the length of the work. Grout mixing and injection equipment consists of grout mixers, high powered grout pumps and supporting generators and air compressors, holding tanks, water tanks, with bulk silos of grout typically used to feed large mixers. Smaller equipment can be used in combination with the single phase-fluid system and can be permanently trailer mounted to permit efficient mobilization and easy movement at the job site.

Prior to commencing production jet grouting, a field test program is typically completed to evaluate injection parameters and to assess jet grout column geometries, and mechanical and permeability properties. Where possible, jet grout test elements are exposed by excavation and properties are obtained by direct measurement. Bulk samples are collected and delivered to a laboratory for unconfined compressive strength and permeability testing, as required. Where excavation is not possible, core drilling is employed to obtain samples from the jet grout test columns for strength testing.

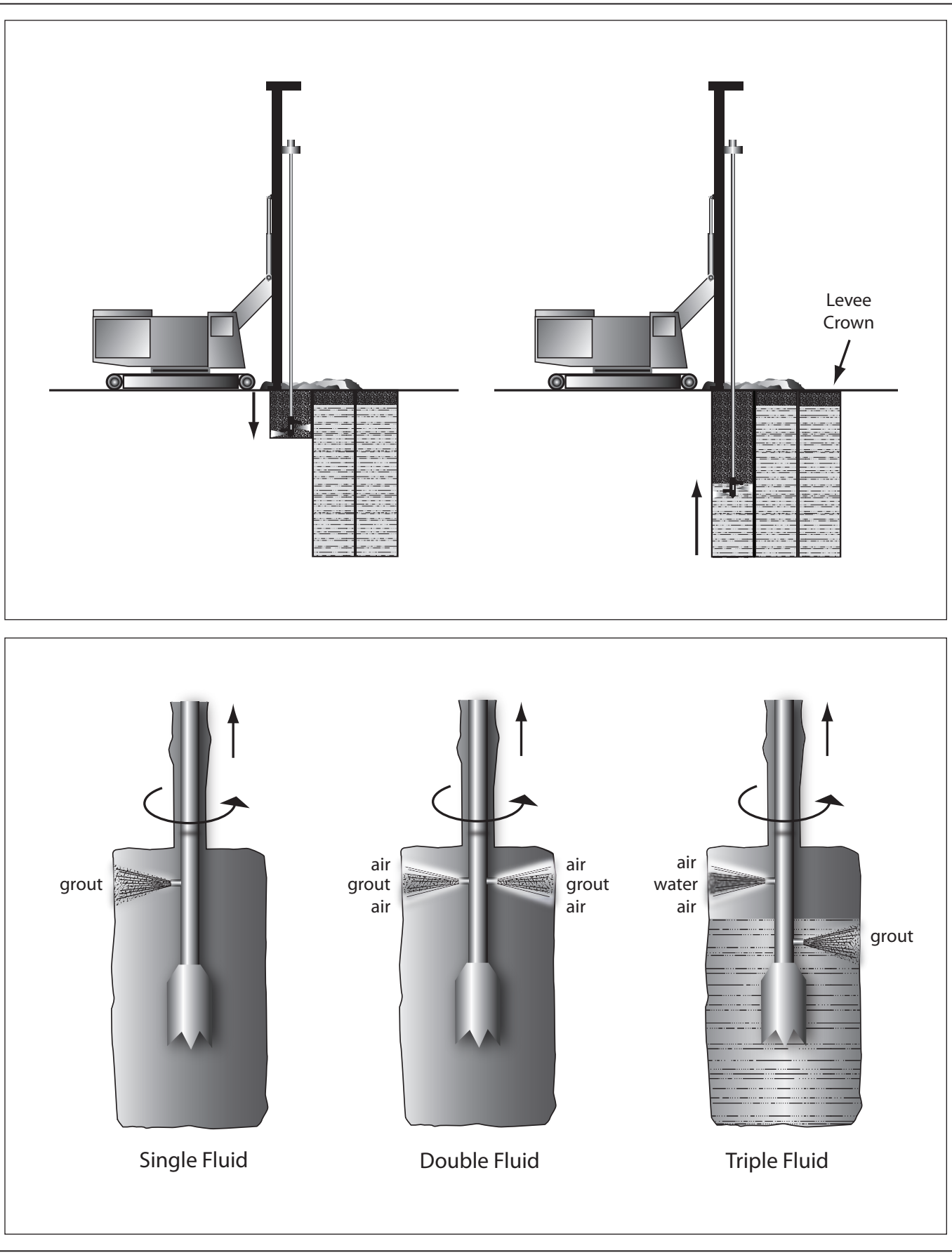
Types of Jet Grouting Systems

A single phase jet grouting system uses the binder to break up and provide soil mixing of the soils surrounding the drill rods. The single jet grouting system is the most versatile; it can be applied at any inclination and in areas where space is restricted. Set up and excavation times are considerably shorter; the method is also less expensive, cleaner, and less noisy than the 3-fluid jet grouting system.

A double phase jet grouting system improves the range of influence of the single phase jet grouting system using an aureole of compressed air concentric about the jet of binder. The diameter of a column of soil treated by the single phase jet grouting system can be increased by adding the air component. Additional equipment includes a 2-way coaxial drill string and an air compressor.

The triple phase or Kajima jet grouting system uses water and air to break up the soil to produce partial substitution of the finer soil particles to create a column of stabilized material whose diameter may exceed 6 feet. Additional equipment includes a 3-way coaxial drill string, an air compressor, and an additional pump and lines for the water phase.

The superjet grouting system is a modified double phase jet grouting system that uses tooling design efficiencies and increased energy that allows for the construction of large columns, up to 16 feet in diameter. The superjet system operates by mechanically and hydraulically focusing the injection of the grout for pinpoint cutting and erosion of very large volumes of soil in situ. The excess soil-grout mixture is simultaneously expelled at the surface, preventing subsurface pressurization and



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Figure 2-9
Jet Grouting Diagrams

hydrofracturing. A listing of equipment and materials necessary to construct the jet grouting system is provided in Table 2-6.

Table 2-6. Jet Grouting Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	
Work Platform excavation	Excavator or track hoe	
Jet Grouting	Jet grouting drill rig	
	Mobile batch plant	Cement, bentonite
	High pressure, high flow pump	Water
	Piping from drill rig to batch plant (spoil line)	
	Piping from batch plant to drill rig	
Replacement of levee material	Bulldozer	Water
Finish grading	Front end loader	
Site restoration and demobilization	Haul truck	Miscellaneous construction support materials
	Paddle wheel scraper	Embankment fill material
	Water truck	

Areas used for construction staging, the levee slope, and any other disturbed areas are restored and hydroseeded following construction.

2.5.2.2.3 Operation and Maintenance

Post-construction, the only permanent facility is the seepage cutoff barrier. The only O&M activity would be observation for seepage during high-water events.

2.5.2.3 Flood Program (Seepage Control): Relief Wells

2.5.2.3.1 Objective

Relief wells are passive systems that are constructed near the levee landside toe to provide a low-resistance pathway for under-seepage to exit to the ground surface in a controlled and observable manner (Figure 2-10). A low-resistance pathway allows under-seepage to exit without creating sand boils or piping levee foundation materials. Relief wells are an option only in reaches where geotechnical analyses have identified continuous sand and gravel layers. Relief wells are used to address the levee deficiency of under-seepage.

2.5.2.3.2 Design and Construction

Relief wells are constructed using soil-boring equipment to drill a hole vertically through the fine-grained blanket layer (sand) into the coarse-grained aquifer layer (gravel) beneath. Pipe casings and gravel/sand filters are installed to allow water to flow freely to the ground surface, relieving the pressure beneath the clay blanket without transporting fine materials to the surface, which can

undermine the levee foundation. The water then is collected in a v-ditch or similar drainage structure, detained, and pumped back into the river.

Relief wells generally are spaced at 50- to 100-foot intervals, dependent upon the amount of under-seepage, and extend to depths of up to 150 feet. Areas for relief well construction are cleared, grubbed, and stripped. During relief well construction, a typical well-drilling rig is used to drill to the required depth and construct the well (including well casing, gravel pack material, and well seal) beneath the ground surface. The drill rig likely would be an all-terrain, track-mounted rig that could access the well locations from the levee toe.

Areas along the levee toe may be used to store equipment and supplies during construction of each well. Construction of each well and the lateral drainage system typically takes 10 to 20 days. Additional time may be required for site restoration.

Equipment and materials necessary to construct a relief well are listed in Table 2-7.

Table 2-7. Relief Wells—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Well casing
Drilling and well installation	Trench excavator or track hoe	Sand and gravel
Finish grading	Drill rig	Concrete
Site restoration and demobilization	Equipment support vehicle	Drain pipe
	Haul truck	Hydroseed
	Motor grader	
	Sheepsfoot roller	
	Water truck	
	Small compactor	

Post-construction, areas used for construction staging, the levee slopes, and any other disturbed areas are hydroseeded.

2.5.2.3.3 Operation and Maintenance

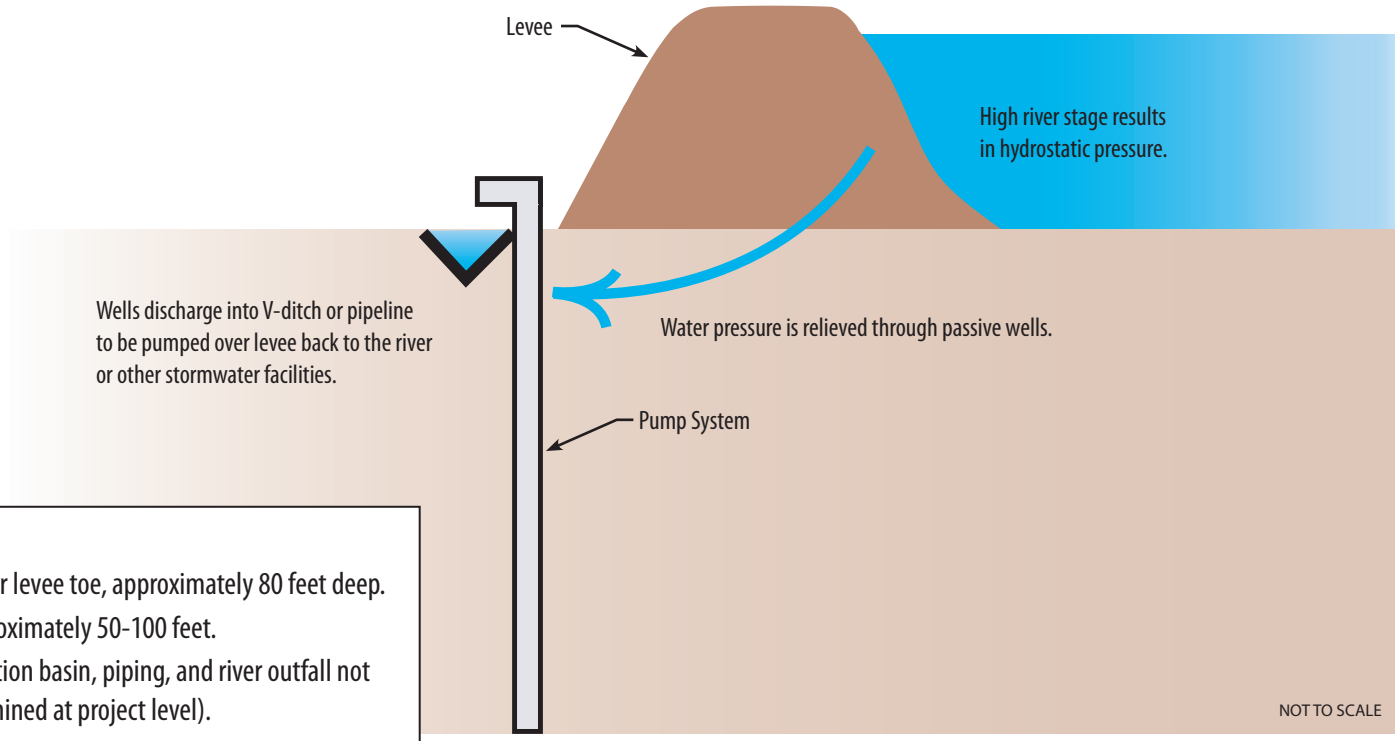
Relief wells require regular maintenance to ensure proper operation. Piezometers, also called monitoring wells, could be installed between relief wells to allow monitoring of groundwater levels to ensure the wells are relieving the pressure within the aquifer.

Permanent facilities associated with relief wells include the wells themselves, associated lateral drains, and the pump station. Inspection of the relief wells is required at least annually, and observation of flow from the wells is required during high river stages. The wells are test-pumped every 2 years, and the discharge water from those tests is trucked off site to a central disposal, if necessary. The collection ditch is maintained to allow free flow of water.

Relief Wells

Concept:

Water pressure is relieved via passive wells, which control water discharge into a collection system.



DETAILS

- Wells are drilled near levee toe, approximately 80 feet deep.
- Well spacing is approximately 50-100 feet.
- Pump station detention basin, piping, and river outfall not shown (to be determined at project level).

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Figure 2-10
Relief Wells

2.5.2.4 Flood Program (Seepage Control): Seepage Berm

2.5.2.4.1 Objective

Seepage berms are wide embankment structures made up of low-permeability materials that resist accumulated water pressure and safely release seeping water (Figure 2-11). A seepage berm is typically one-third the height of the levee, extending outward from the landside levee toe approximately 300 to 400 feet, and laterally along the levee as needed relative to the seepage conditions. A seepage berm addresses the deficiency of under-seepage.

There are two types of berms that could be constructed as part of the WSLIP: (1) hybrid and (2) semi-pervious berms.

2.5.2.4.2 Hybrid Berm

Design and Construction

A hybrid berm is a seepage berm with a layer of drain rock along the ground surface underneath random fill material. Hybrid berms can vary in width between four times the levee height or 100 feet (minimum) and 300 feet (maximum). Lateral length is dependent on seepage conditions along the levee. A typical 100-foot-wide berm has a height of 5 feet at the landside levee toe tapering off to 3 feet at the end of the berm. A typical 300-foot-wide berm tapers from 7.5 feet at the levee landside toe to 3 feet at the end.

Construction consists of clearing, grubbing, and stripping the ground surface and placing a 1-foot-thick layer of drain rock across the ground surface. Bulldozers then excavate and stockpile borrow material from a nearby borrow site. Front-end loaders load haul trucks, and the haul trucks subsequently transport the borrow material to the hybrid berm site. The haul trucks dump the material and motor graders spread it evenly, placing approximately 3 to 5 feet of embankment fill material over the drain rock. Sheepsfoot rollers compact the material, and water trucks distribute water over the material to ensure proper moisture for compaction.

Equipment and materials necessary to construct a hybrid berm are listed in Table 2-8.

Table 2-8. Hybrid Berm—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Embankment fill material
Drain rock and embankment fill material placement	Excavator or track hoe	Drain rock
	Bulldozer	Water
Finish grading	Front end loader	Aggregate base rock
Site restoration and demobilization	Haul truck	Hydroseed
	Motor grader	
	Sheepsfoot roller	
	Water truck	

Post-construction, areas used for construction staging, the levee, the berm, and any other disturbed areas are hydroseeded.

Operation and Maintenance

The only post-construction permanent facility is the berm. Maintenance of the berm would be similar to the typical O&M practices for levee slopes as described under in-place levee raise.

2.5.2.4.3 Semi-Pervious Berm

Design and Construction

Semi-pervious berms are similar to hybrid berms without the layer of drain rock. Semi-pervious berms vary from 150 to 400 feet in width. Typical height of the berm is 9 feet at the levee landside toe and it tapers to 4 feet at the berm toe, regardless of the berm width. Lateral length depends on seepage conditions along the levee reach.

Construction consists of clearing, grubbing, and stripping the ground surface. Bulldozers excavate and stockpile borrow material from a nearby borrow site. Front-end loaders load haul trucks, and the haul trucks subsequently transport the borrow material to the hybrid berm site. The haul trucks dump the material and motor graders spread it evenly, placing approximately 4 to 9 feet of embankment fill material. Sheepsfoot rollers compact the material and water trucks distribute water over the material to ensure proper moisture for compaction.

Equipment and materials necessary to construct a semi-pervious berm are listed in Table 2-9.

Table 2-9. Semi-Pervious Berm—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Embankment fill material
Embankment fill material placement	Excavator or track hoe	Water
Finish grading	Bulldozer	Aggregate base rock
Site restoration and demobilization	Front end loader	Hydroseed
	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	

Areas used for construction staging, levee slopes, the berm, and any other disturbed areas are hydroseeded.

Operation and Maintenance

The only post-construction permanent facility is the berm. Maintenance of the berm would be similar to the typical O&M practices for levee slopes as described under in-place levee raise.

2.5.2.5 Flood Program (Seepage Control): Sheet Pile Wall

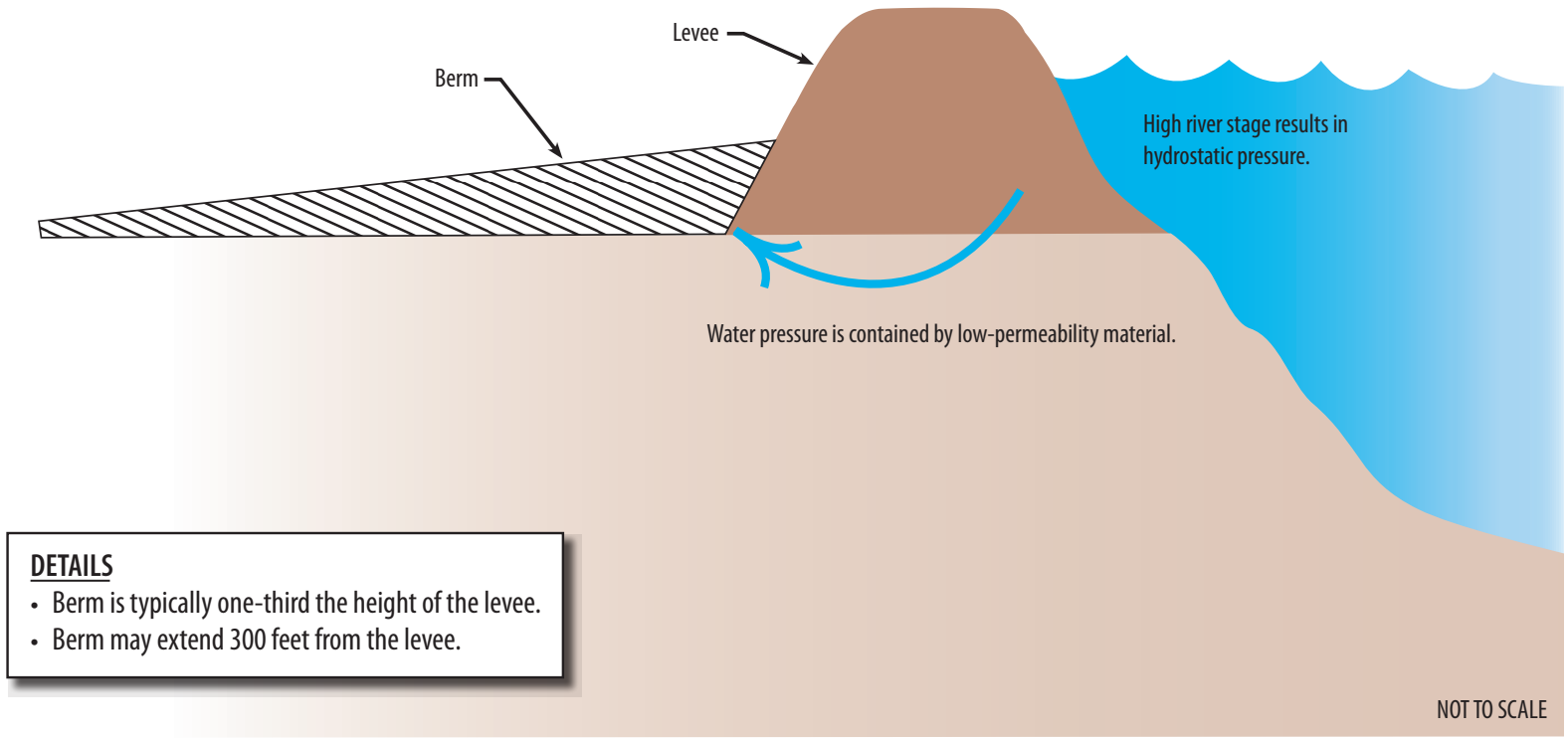
2.5.2.5.1 Objective

A sheet pile wall is a series of vertical panels of interlocking steel that is placed parallel to the levee, typically through the center of the levee crown to provide an impermeable barrier (Figure 2-12). A sheet pile wall addresses the deficiencies of seepage (through- and under-seepage).

Seepage Berm

Concept:

Water pressure is contained and dispersed by a thickened soil layer.



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Figure 2-11
Seepage Berm

2.5.2.5.2 Design and Construction

The site where sheet piles are to be installed is cleared, grubbed, and stripped to allow for construction activities. A hydraulic- or pneumatically operated pile- driving head attached to a crane drives the sheet pile into the levee crown to the desired depth (up to 135 feet). If the levee material is particularly solid, pre-drilling may be necessary. The conditions of the site and the desired life of the project determine the thickness and configuration of the sheet piles.

Equipment and materials necessary to construct sheet piles are listed in Table 2-10. Post-construction, construction staging areas, the levee crown, slopes, and any other disturbed areas are hydroseeded.

Table 2-10. Sheet Pile Wall—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Sheet-Sheet pile walls
Pile driving of sheet piles	Excavator or track hoe	Water
Finish grading	Front end loader	Aggregate base rock
Site restoration and demobilization	Haul truck	Hydroseed
	Crane	
	Water truck	

2.5.2.5.3 Operation and Maintenance

The only post-construction permanent facility is the sheet pile wall. The only O&M activity would be observation for seepage during high-water events.

2.5.2.6 Flood Program (Seepage Control): Slurry Cutoff Wall

2.5.2.6.1 Objective

A slurry cutoff wall consists of impermeable material that is placed parallel to the levee, typically through the center of the levee crown (Figure 2-13). There are two methods for constructing a slurry cutoff wall: (1) conventional slot trench and (2) deep soil mixing (DSM). Either method could be used to construct slurry cutoff walls in the WSLIP study area. A slurry cutoff wall addresses the deficiency of seepage (through- and under-seepage).

2.5.2.6.2 Conventional Slot Trench Method

Design and Construction

To begin construction, the construction site and any necessary construction staging or slurry mixing areas are cleared, grubbed, and stripped.

In the conventional slot trench method, a trench is excavated at the top center of the levee and into subsurface materials. The size of the trench is based on the severity of the seepage but can be typically 3 feet wide and up to 140 feet deep. As the trench is excavated, it is filled temporarily with bentonite water slurry to prevent cave in. The soil from the excavated trench then is hauled to a nearby location where it is mixed with hydrated bentonite to reduce permeability and cement in

some applications where increased strength is desired. The soil-bentonite mixture then is returned to the levee and backfilled into the trench. This mixture hardens and creates the impermeable barrier wall in the levee.

In most cases, degradation of the levee crown is necessary to create a large enough working platform and reduce the risk of hydraulic fracturing from the insertion of slurry fluids, also allowing greater depths to be reached. Dependent on the conditions of the particular levee, it may be necessary to degrade the levee by one- to two-thirds its existing height. The excavated material is hauled to a nearby stockpile area. Following completion of the slurry cutoff wall, the material is hauled back to the levee to restore the levee to its original dimensions. The material may need to be hauled offsite and borrow material may need to be imported if the in-situ levee material is found to be unsuitable for current levee standards.

One construction crew typically is able to construct 40 to 50 linear feet of slurry wall (approximately 70 to 80 feet deep) in an 8-hour shift. Equipment needed for the crew includes a long-reach track hoe, three or four dump trucks (15-cubic- yard capacity each), two loaders at the mixing location, bulldozers, excavators, loaders, a rough terrain forklift, compactors, maintainers, and a water truck. Vertical clearance of about 40 feet is needed for the excavator boom. Horizontal clearance of about 30 feet beyond the levee crest may be required for excavator swing when loading dump trucks.

A mixing area is located at the construction staging area. The mixing area is to prepare the soil-bentonite mixture and supply bentonite-water slurry. The mixing area is contained to avoid inadvertent dispersal of the mixing materials. Dump trucks haul material between the excavator and the mixing area along the levee.

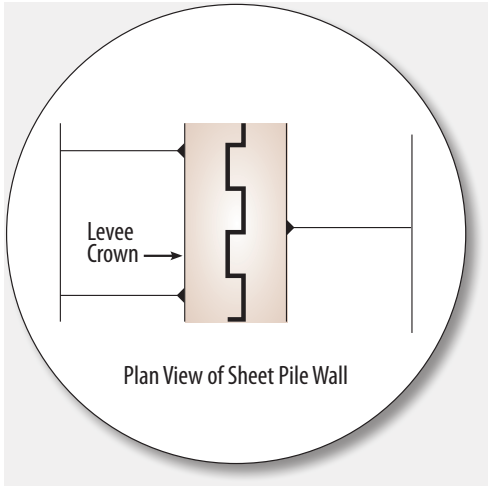
An access road made of aggregate base rock is constructed on the levee crown to enable regular levee inspections.

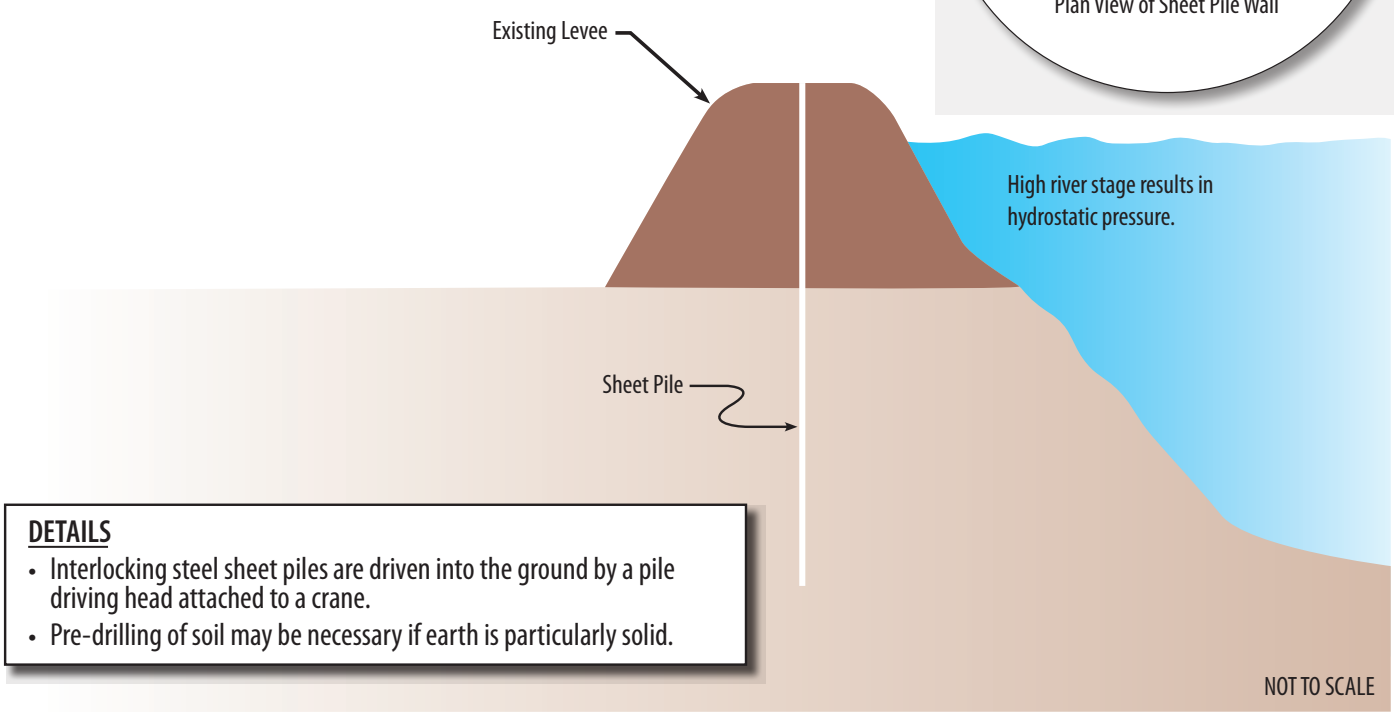
A listing of the construction equipment and materials necessary to construct a slurry cutoff wall by this method are listed in Table 2-11. Post-construction, areas used for construction staging, mixing, the levee crown, slopes, and any other disturbed areas are hydroseeded.

Sheet Pile Wall

Concept:

Steel panels are driven into the levee core to provide a seepage barrier.





DETAILS

- Interlocking steel sheet piles are driven into the ground by a pile driving head attached to a crane.
- Pre-drilling of soil may be necessary if earth is particularly solid.

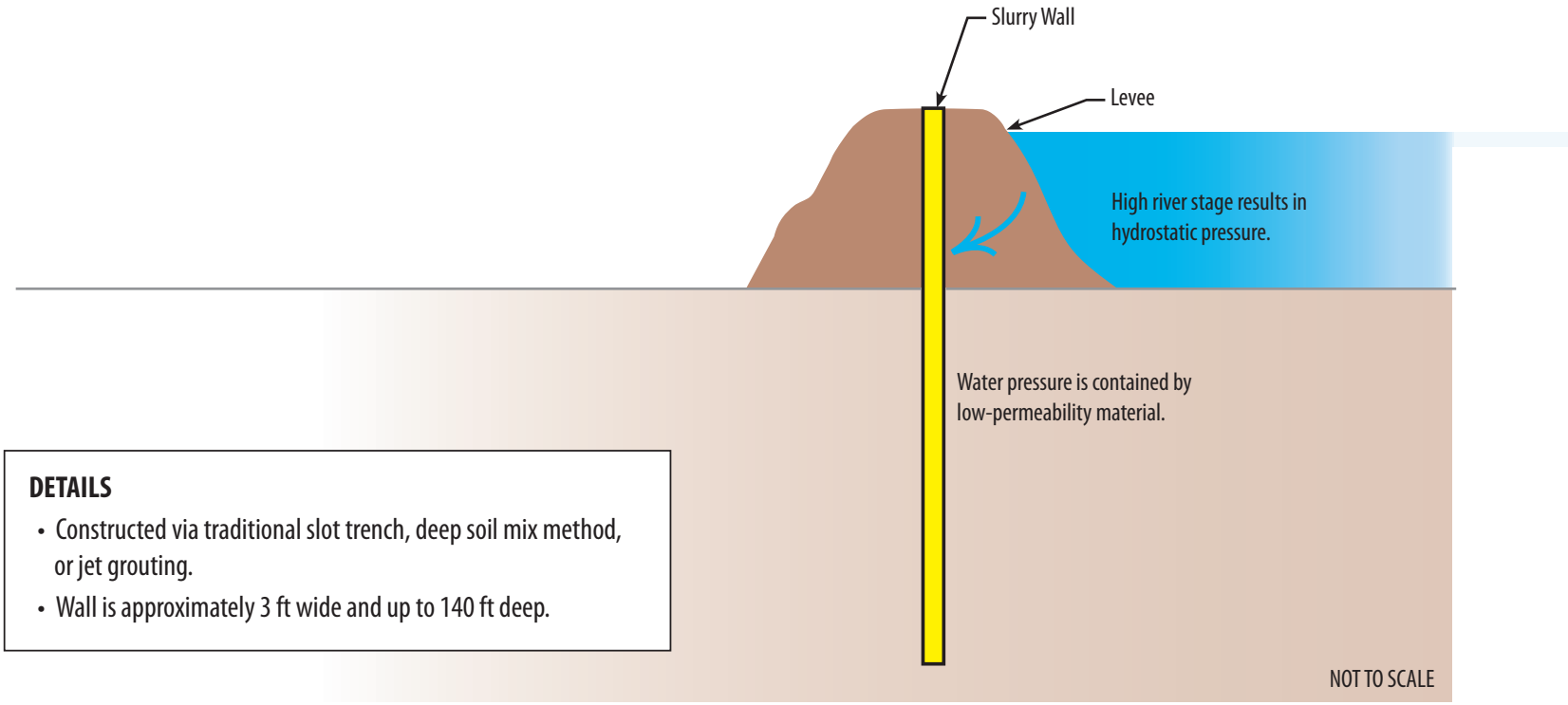
00875.07 EIS (7-09)

Figure 2-12
Sheet Pile Wall

Slurry Cutoff Wall

Concept:

Water pressure is contained and dispersed by a low-permeability wall constructed within the levee cross section.



DETAILS

- Constructed via traditional slot trench, deep soil mix method, or jet grouting.
- Wall is approximately 3 ft wide and up to 140 ft deep.

00875.07 EIS (7-09)

Figure 2-13
Slurry Cutoff Wall

Table 2-11. Conventional Slot Trench Slurry Wall—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Cement
Work platform and trench excavation	Excavator or track hoe	Bentonite
Mixing/placement of soil bentonite mix	Long reach track hoe	Aggregate base rock
Replacement of levee material	Bulldozer	Hydroseed
Finish grading	Front end loader	Water (if no available domestic supply)
Site restoration and demobilization	Haul truck	
	Compactor	Miscellaneous construction support materials
	Maintainer	Embankment fill material (if existing material is of poor quality)
	Water truck	
	Rough terrain forklift	

Operations and Maintenance

Post-construction, the only permanent facility is the slurry cutoff wall. The only O&M activity would be observation for seepage during high-water events.

2.5.2.6.3 Deep Soil Mixing Method

Design and Construction

The DSM method of constructing a slurry cutoff wall uses a crane-supported set of two to four mixing augers (typically 36 inches in diameter) set side by side. These augers are drilled through the levee crown and foundation to the required depth (capable of a maximum depth of about 200 feet). As the augers are inserted and withdrawn, a cement-bentonite grout is injected through the augers and mixed with the native soil. An overlapping series of mixed columns is drilled to create a continuous seepage cutoff barrier (Figure 2-14).

To provide a wide enough working platform on the levee crown, the upper portion of some segments of the levee requires excavation with a paddle wheel scraper. Material is scraped and stockpiled at a nearby stockpile area. Dependent on the depth of the wall required, vertical clearance for the crane also may be needed. An excavator manipulates injector return spoils near the DSM rig, and transport trucks are used to haul spoils off site. A crane is used for in-place sampling of DSM material and also for loading bentonite into the batch plant hopper. A mobile batch plant (diesel-powered) is required near each DSM rig at the work area to prepare the cement-bentonite grout. The grout is transported to the DSM rig through flexible hoses. Each batch plant requires a pad of 50 by 100 feet. Hauling at the work area involves scraper runs along the levee to the staging area and cement and bentonite deliveries to the batch plant.

During DSM slurry wall construction, one DSM rig typically can construct 20 linear feet of DSM wall per eight-hour shift (for wall depths up to 135 feet).

The equipment and materials necessary to construct a DSM slurry wall are listed in Table 2-12. Post-construction, areas used for construction staging, the levee slopes, and any other disturbed areas are hydroseeded.

Table 2-12. Deep Soil Mixing Slurry Wall—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Cement
Work platform excavation	Excavator or track hoe	Bentonite
Deep soil mixing (DSM)	DSM crane	Hydroseed
Replacement of levee material	Bulldozer	Water (if no available domestic supply)
Finish grading	Front end loader	Aggregate base rock
Site restoration and demobilization	Haul truck	Miscellaneous construction support materials
	Paddle wheel scraper	Embankment fill material (if existing material is of poor quality)
	Water truck	
	Mobile batch plant	

Operation and Maintenance

Post-construction, the only permanent facility is the slurry cutoff wall. The only O&M activity would be observation for seepage during high-water events.

2.5.3 Flood Program Improvements for Slope Stability and Geometry

2.5.3.1 Flood Program (Slope Stability/Geometry): Slope Flattening

2.5.3.1.1 Objective

Slope flattening is a mechanical method to repair or reshape slopes that do not meet standards for geometry and stability (Figure 2-15). Levee slopes are typically subject to a standard of 3H:1V, but this may vary based on site-specific conditions and supporting engineering analysis. Slope flattening addresses the deficiency of slope stability and geometry.

2.5.3.1.2 Design and Construction

To begin slope flattening activities, the area is cleared, grubbed, and stripped to provide space for construction and reshaping of slopes. Additional embankment fill material may be necessary to achieve slope flattening. If so, bulldozers excavate and stockpile borrow material from a nearby permitted borrow site. Front-end loaders load haul trucks with the borrow material. The haul trucks transport the material to slope flattening site. Motor graders spread material evenly according to levee design plans, and sheepsfoot rollers compact the material. Water trucks distribute water over the material to ensure proper moisture for compaction.

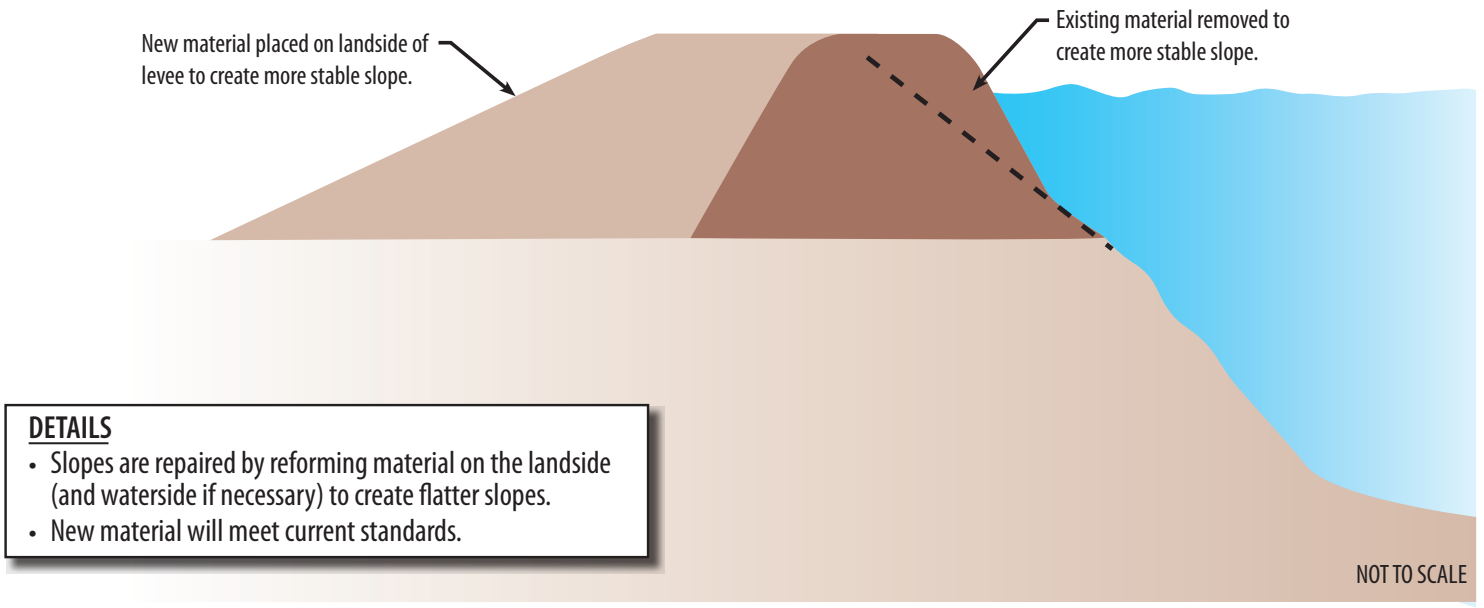


Figure 2-14
Deep Soil Mixing

Slope Flattening

Concept:

Flatter slopes are more stable and less susceptible to erosion.



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Figure 2-15
Slope Flattening

To reshape a waterside slope, the existing crown of the levee is shifted farther landward and the waterside slope is trimmed and reshaped to a 3:1 slope. The shifted levee crown would be a minimum of 20 feet wide, with a 3:1 slope on the landward side. An access road made of aggregate base rock is constructed on the levee crown.

Equipment and materials necessary to implement slope flattening treatment are listed in Table 2-13. Post-construction, the construction staging areas, levee slopes, and any other disturbed areas would be hydroseeded.

Table 2-13. Slope Flattening—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Embankment fill material
Reshaping of slopes and placement of additional fill (if necessary)	Excavator or track hoe	Water
Finish grading	Bulldozer	Aggregate base rock
Site restoration and demobilization	Front end loader	Hydroseed
	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	

2.5.3.1.3 Operation and Maintenance

Post-construction, the only permanent facility is the improved levee. O&M would be the same as typical levees, as described under the in-place levee raise.

2.5.3.2 Flood Program (Slope Stability/Geometry): Stability Berm

2.5.3.2.1 Objective

A stability berm would be constructed against the landside slope of the existing levee with the purpose of supplying support as a buttress (Figure 2-16). The height of the stability berm is generally two-thirds the height of the levee; the structural needs of the levee determine the distance it extends along that reach. A stability berm addresses the deficiency of stability.

2.5.3.2.2 Design and Construction

To begin the construction of a stability berm, the site is cleared, grubbed, and stripped to provide space for construction and shaping of the berm. Embankment fill material necessary to construct the berm is excavated by a bulldozer from a nearby borrow site. Front-end loaders load haul trucks with the borrow material and the haul trucks transport the material to the stability berm site. Motor graders spread the material evenly according to design specifications, and a sheepsfoot roller compacts the material. Water trucks distribute water over the material to ensure proper moisture for compaction.

Equipment and materials necessary to construct a stability berm are listed in Table 2-14.

Table 2-14. Stability Berm—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Embankment fill material
Construction and shaping of stability berm	Excavator or track hoe	Water
Finish grading	Bulldozer	
Site restoration and demobilization	Front end loader	Hydroseed
	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	

2.5.3.2.3 Operation and Maintenance

The only post-construction permanent facility is the berm. O&M would be as described under the in-place levee raise.

2.5.4 Flood Program Improvements for Erosion Control

2.5.4.1 Flood Program (Erosion Control): Rock Slope Protection

2.5.4.1.1 Objective

Portions of the levee slopes may be protected by the placement of rock slope protection. Rock is placed in a layer approximately 1 foot thick on the waterside of the levee to protect against erosional forces that threaten levee stability, such as wind, waves, and boat wake (Figure 2-17) Rock slope protection addresses the levee deficiency of erosion.

Wherever possible, the bank protection is designed both to control erosion and to maintain existing vegetation and instream woody material as much as possible. This can be accomplished by incorporating rock benches that serve as buffers against extreme toe scour and shear stress while providing space for planting riparian vegetation and creating a platform to support aquatic habitat features. Such features would be subject to and designed in compliance with USACE levee vegetation guidance.

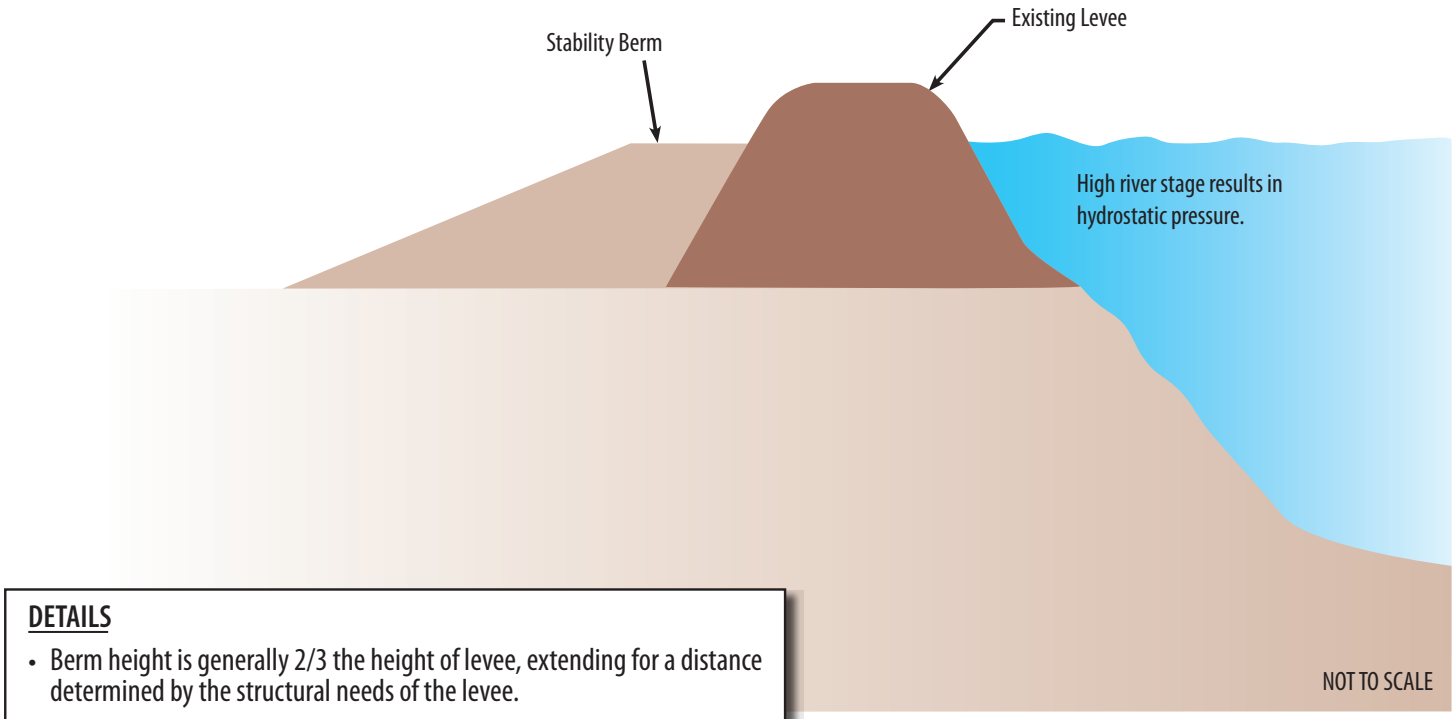
2.5.4.1.2 Design and Construction

The placement of rock requires one excavator and one loader for each potential placement site. The loader brings the rock from a permitted source, within 25 miles of the project area, and dumps it within 100 feet of the levee. The excavator then moves the rock from the stockpile to the waterside of the levee. Soil may be placed in the interstitial spaces, followed by vegetation installation by hand. Equipment and materials necessary for rock slope protection are listed in Table 2-15.

Stability Berm

Concept:

Provides additional support to levee to increase strength.



DETAILS

- Berm height is generally 2/3 the height of levee, extending for a distance determined by the structural needs of the levee.

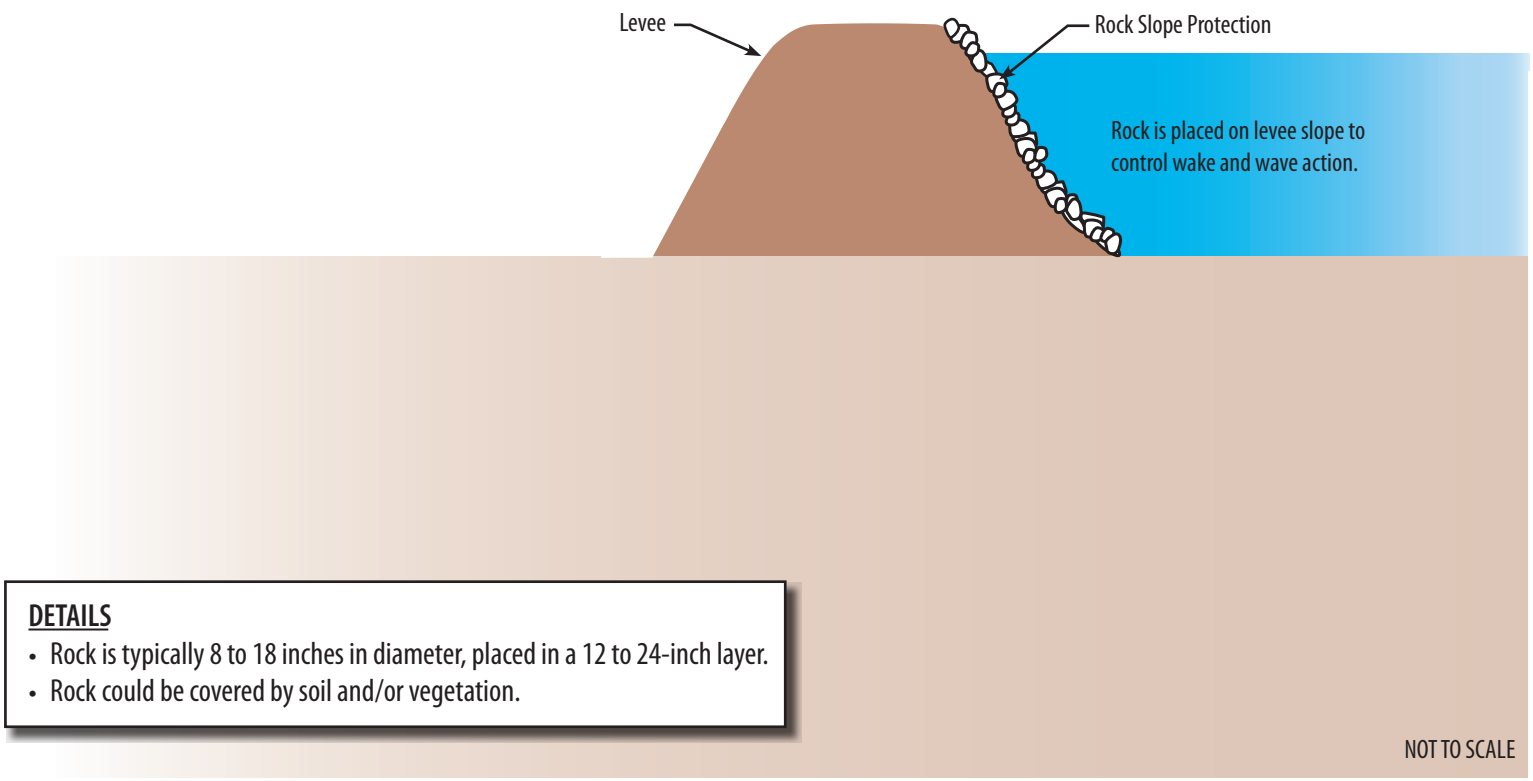
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Figure 2-16
Stability Berm

Rock Slope Protection

Concept:

Water-side erosion is prevented by placement of rock.



00875.07 EIS (7-09)

Figure 2-17
Rock Slope Protection

Table 2-15. Rock Slope Protection—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (dependent on site conditions: clearing, grubbing, and stripping)	Scraper	Rock and soil (optional)
Rock placement	Excavator	Hydroseed
Biotechnical element installation	Hand tools	Geotextiles, coir logs, and stakes (optional)
Site restoration and demobilization	Haul truck	Pole cuttings, container stock, and transplanted vegetation (optional)

Post-construction, areas disturbed by the equipment or the rock stockpile area are hydroseeded.

2.5.4.1.3 Operation and Maintenance

The only permanent features post-construction would be the rock slope and vegetation and other biotechnical features. O&M for plantings may include irrigation, weeding, and monitoring during an establishment period.

2.5.5 Other Flood Program Improvements

2.5.5.1 Flood Program (Other): Setback Levee

2.5.5.1.1 Objective

A setback levee is an entirely new section of levee constructed at some distance behind the landside of the existing levee (Figure 2-18). The existing levee remains in place or is removed or breached, depending on conditions in that levee reach. The new section of levee is tied into the existing levee and then becomes the Federal project levee.

A setback levee can address the following deficiencies:

- inadequate levee height,
- through-seepage,
- slope stability and geometry,
- erosion, and
- non-compliant vegetation.

2.5.5.1.2 Design and Construction

The new levee section is constructed to meet current design standards, including height and slope requirements. To begin construction activities, the area required to construct the new levee is cleared, grubbed, and stripped. To construct the new section of levee, bulldozers excavate and stockpile borrow material from a nearby permitted borrow site. Front-end loaders load haul trucks with the borrow material. The haul trucks transport the material to the new levee site where motor graders spread it evenly. Sheepsfoot rollers compact the material, and water trucks distribute water over the material to ensure proper moisture for compaction. Levee slopes are graded to a 3:1 slope,

and a crown at least 20 feet wide is created. For the purpose of levee inspection, an aggregate base access road is constructed on the crown of the new levee.

If the material from the existing levee is of sufficient quality and not intended to remain in place, it may be excavated and used as fill for the new setback levee. If the existing levee is excavated, grading may be necessary within the setback area (between the new levee and the river) to ensure proper drainage.

Equipment and materials necessary to construct a setback levee are listed in Table 2-16. Post-construction, construction staging areas, levee slopes, and any other disturbed areas are hydroseeded.

Table 2-16. Setback Levee—Phases, Equipment, and Materials

Phases of Construction	Equipment	Materials
Site preparation (clearing, grubbing, and stripping)	Scraper	Embankment fill material
Embankment fill material placement	Excavator or track hoe	Water
Finish grading	Bulldozer	Aggregate base rock
Site restoration and demobilization	Front end loader	Hydroseed
	Haul truck	
	Motor grader	
	Sheepsfoot roller	
	Water truck	

2.5.5.1.3 Operations and Maintenance

Post-construction, the only permanent facility is the improved levee. O&M would be the same as for a typical levee, described under in-place levee raise.

2.5.5.2 Flood Program (Other): Vegetation Removal

2.5.5.2.1 Objective

Levee standards for vegetation and encroachments may require woody plants to be removed from levees and maintenance easement areas. This improvement addresses the levee deficiency of non-compliant vegetation (Figure 2-19).

2.5.5.2.2 Design and Construction

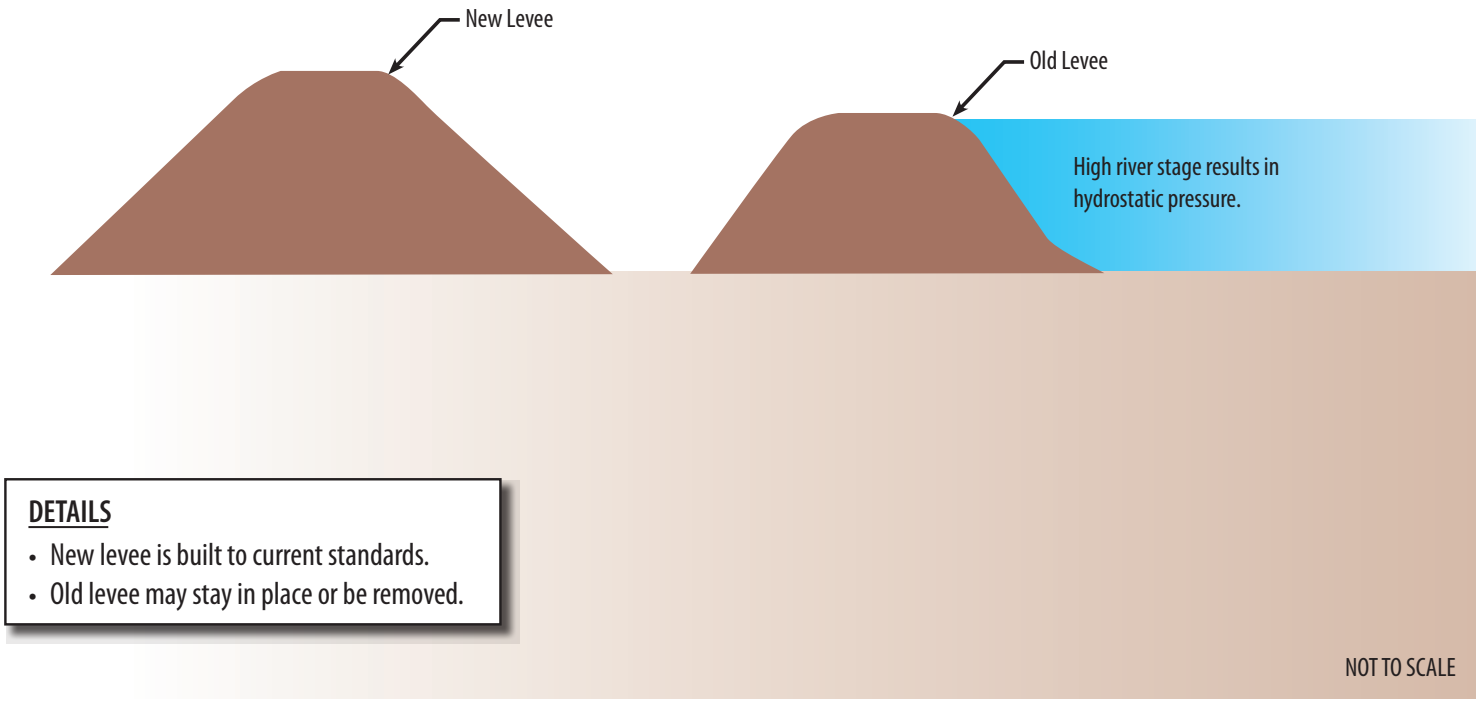
As discussed in the section describing levee deficiencies, USACE has published new Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures for the control of vegetation on levees (ETL 1110-2-571 10 April 2009), hereafter referred to as USACE levee vegetation guidance. These guidelines recommend that a vegetation-free zone be established (Figure 2-19).

- The vegetation-free zone is a three-dimensional corridor surrounding all levees, floodwalls, embankment dams, and critical appurtenant structures in all flood damage reduction systems. The vegetation-free zone applies to all vegetation except perennial, non-irrigated grass. Grass species are permitted. The only grasses permitted are perennial grasses whose primary function

Setback Levee

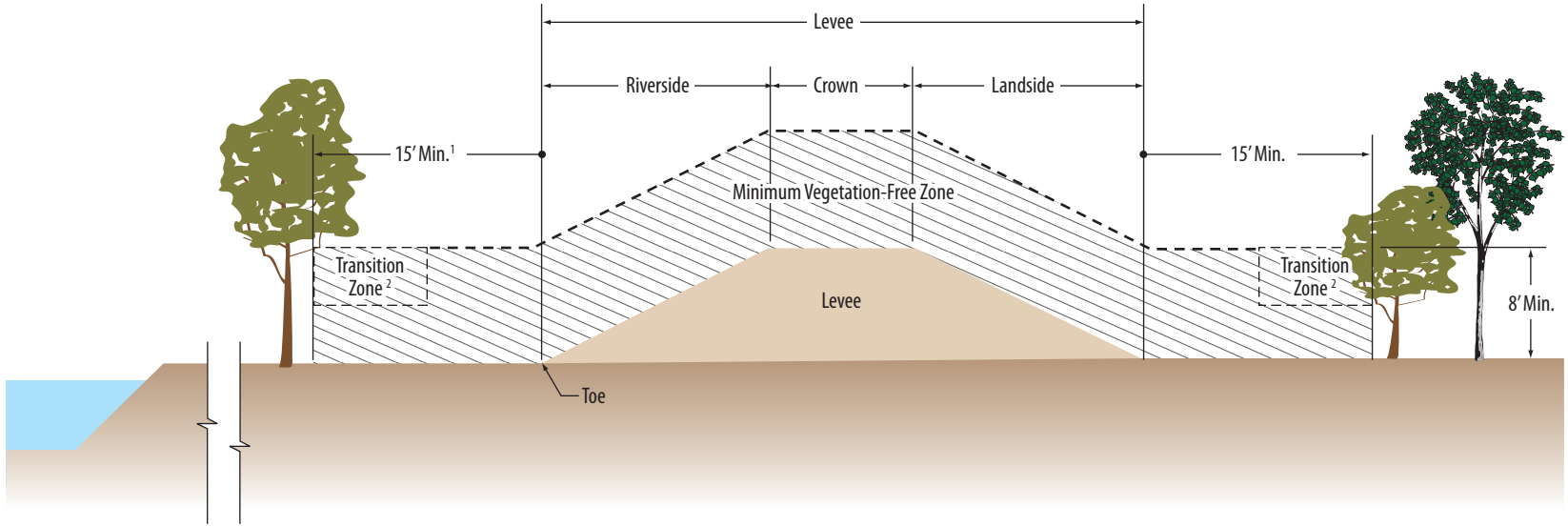
Concept:

A new levee is built toward the landside of an existing levee where the existing levee is not readily repairable or where more flooding capacity is desired.



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Figure 2-18
Setback Levee



Notes:
1. 15′ or distance to edge of normal water surface, if less
2. In this 4′x7′ transition zone, temporary obstruction by limbs and crown is allowed during development of new plantings, for up to 10 years

NOT TO SCALE

00875.07 EIS (7-09)

Figure 2-19
Vegetation-Free Zone
Defined in Engineering Technical Letter 1110-2-571 (2009)

is to reliably protect against erosion. The species selected for each project shall be appropriate to local climate, conditions, and surrounding or adjacent land uses. Preference should be given to native species.

- The primary purpose of a vegetation-free zone is to provide a reliable corridor of access to, or along, levees, floodwalls, embankment dams, and appurtenant structures. This corridor must be free of obstructions to assure adequate access by personnel and equipment for surveillance, inspection, maintenance, monitoring, and flood-fighting. In the case of flood-fighting, this access corridor must also provide the unobstructed space needed for the construction of temporary flood-control structures. Access is typically by four-wheel-drive vehicle, but for some purposes, such as maintenance and flood-fighting, access is required for larger equipment, such as tractors, bulldozers, dump trucks and helicopters. Accessibility is essential to the reliability of flood damage reduction systems.
- The vegetation-free zone must be wide enough and tall enough to accommodate all likely access requirements.
- The minimum width of the corridor shall be the width of the levee, floodwall, or embankment dam, including all critical appurtenant structures, plus 15 feet on each side, measured from the outer edge of the outermost critical structure. In the case of a landside planting berm, the 15 feet is measured from the point at which the top surface of the planting berm meets the levee section. The minimum height of the corridor shall be 8 feet from any point on the ground.
- No vegetation, other than approved grasses, may penetrate the vegetation-free zone, with two exceptions:
    - Tree trunks are measured to their centerline, so one half of the tree trunk may be within the vegetation-free zone.
    - Newly planted trees, whose crowns can be expected to grow, or be pruned, clear of the vegetation free zone within 10 years may be within the vegetation-free zone. (U.S. Army Corps of Engineers 2009.)

In accordance with the USACE levee vegetation guidance, WSAFCA will submit a detailed removal plan to the local USACE District Levee Safety Officer for review and comment prior to removal of vegetation. Methods for removing non-compliant vegetation are identified below.

- By excavation, remove the trunk (or stem), stump, rootball, and all roots greater then 0.5 inch in diameter—all such roots in, or within 15 feet of, the flood damage reduction structure will be completely removed.
- Assure that the resulting void is free of organic debris.
- Cut poles to salvage propagation materials for replanting, such as willows and cottonwoods.
- Conduct hand clearing using chainsaws and trimmers.
- Conduct mass clearing using bulldozers.

2.5.5.2.3 Operations and Maintenance

Ongoing vegetation maintenance would include mowing, herbicide application, and hand clearing and mass clearing methods discussed above.

2.6 Program-Level Alternatives for Recreation

The City as a member agency of WSAFCA is proposing recreation and non-motorized transport improvements that are compatible with flood improvement actions to meet recreation needs. The West Sacramento Parks Master Plan (Parks Master Plan) has identified several key recreation opportunities for the city that would enable its population and others to enjoy the resources provided by the Sacramento River and other waterways. Some of those opportunities use corridors along waterways such as the Sacramento River, DWSC, turning basin, barge canal, and Yolo and Sacramento Bypasses. These corridors are an opportunity for development of pedestrian and non-motorized linkages that can be used for transportation as well as recreation (Parks Master Plan 2003; Bicycle and Pedestrian Path Master Plan 1995) and would be analyzed along with levee improvements as part of the WSLIP.

Recreation corridors are proposed throughout the city along the water edges. The recreation corridors are designed with multi-purpose trails as the primary features. These trails can be used for recreation and as alternative transportation routes. They are for walking, jogging, biking, and, where appropriate, equestrian use. They also help tie the community together by linking people with destinations such as parks, recreation facilities, schools, churches, and the workplace. In addition to the trail, recreation corridors may include landscaping, benches, small picnic areas, small play areas, and other recreation features. These features may be further developed where the recreation corridor forms the edge of a park. Formalized access to the river and other waterways would be incorporated into the design of waterside recreation corridors at logical locations (Figure2-20) (Parks Master Plan 2003; Bicycle and Pedestrian Path Master Plan 1995).

Recreation improvements have been described below at the program level on the simple basis of trails, parks, developed water access, and special projects. Reach- and feature-specific information is described where available, typically listed on a geographic basis moving clockwise around the city. These descriptions are substantially based on the following City guidance documents:

- City of West Sacramento Parks Master Plan (Parks Master Plan),
- Sacramento Riverfront Master Plan (SRMP),
- Bicycle and Pedestrian Path Master Plan,
- Washington Specific Plan,
- Triangle Specific Plan(now known as Bridge District) , and
- Southport Planning and Design Criteria.

2.6.1.1 Recreation Program: Trails

2.6.1.1.1 Objective

As introduced above, trails provide recreation and alternative transportation links for pedestrians, cyclists, and, where appropriate, equestrians. Patrol roads on levee crowns provide an opportunity for use shared by flood management and recreation, doubling as publicly accessible trails. Many levees already are used this way and could be developed in coordination with flood improvements for safe, managed access.

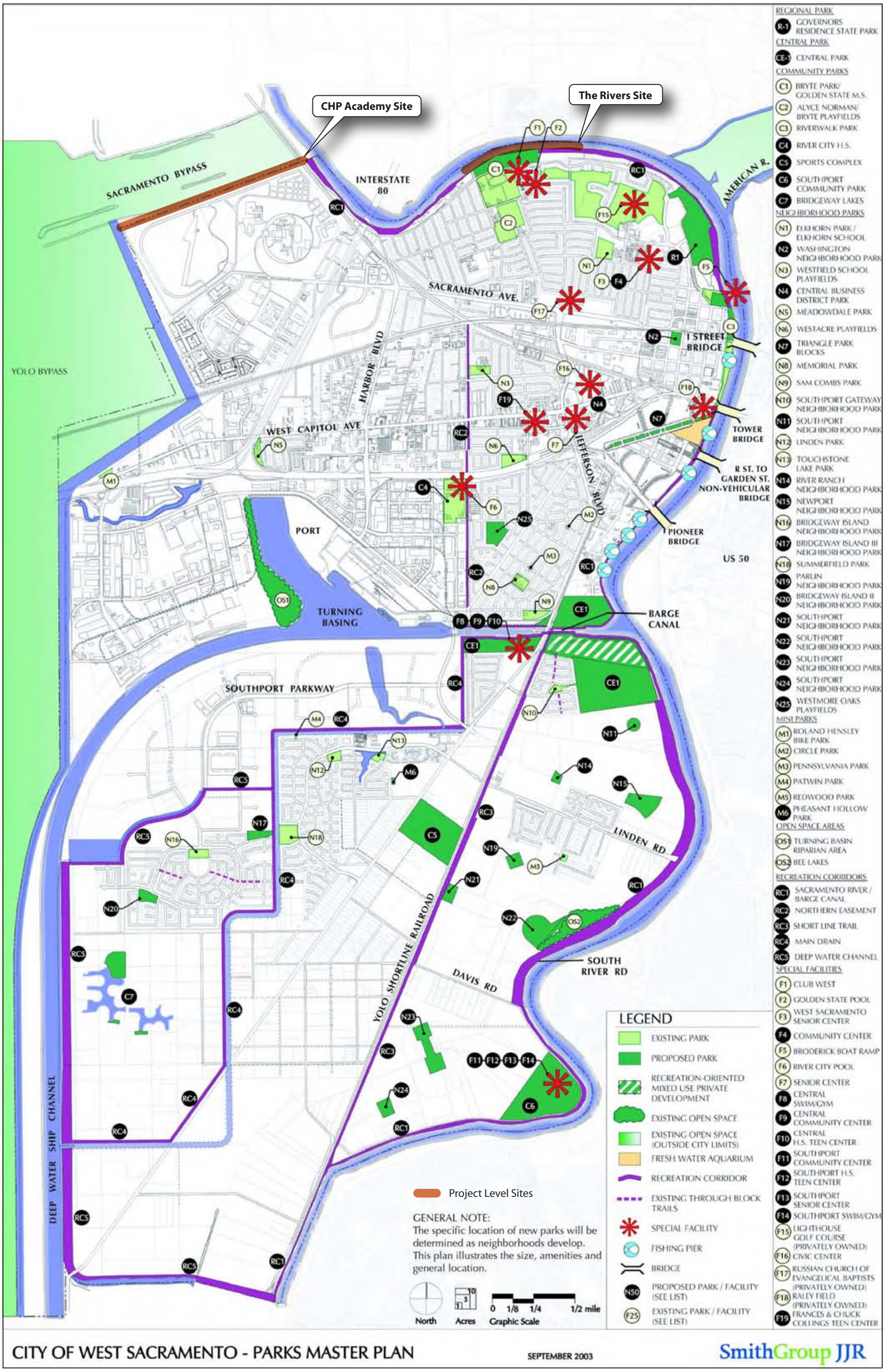


Figure 2-20
Recreation Corridors

2.6.1.1.2 Design and Construction

The development of recreation trails within reclamation district easements is subject to approval by the local reclamation district and CVFPB and generally requires submittal of plans for proposed work with an application to CVFPB for a permit. Recreation trails on levees, therefore, would be consistent with the Standards for Encroachments (April 1976), and Policy on Bicycle Trails on Levees, adopted June 21, 1991, as subject to CVFPB approval. In almost all cases, trails would be paved to ensure accessibility for a broad range of use and user needs.

The following information is a summary based on CVFPB requirements and would be adhered to under the WSLIP.

- Paved trails for bicycles would be designed in accordance with design standards for state highways and county roads. Trails for bicycles would have a minimum width of 12 feet and a minimum shoulder width of 2 feet on each side of the pavement and would consist of a minimum of 6 inches of aggregate base beneath 2 inches of asphalt concrete pavement or equivalent. Trails on the levee slopes are not permitted, except for access ramps. Trails and access ramps would slope away from the levee crown.
- All patrol roads must be maintained for use by the reclamation district. Unauthorized vehicular access would be prevented by a physical barrier that is removable to allow access for maintenance, inspection, and emergency vehicles.
- Barriers would be secured by locks, and keys provided to DWR and the local flood control maintaining agency.
- Ramps must be constructed of imported material. Cuts into and reshaping of the levee, in any manner, are expressly prohibited.
- No excavation or cuts are allowed on the Sacramento River levees from November 1 to April 15.
- Removal of any borrow material from levees and deposit of embankment, spoil, and/or waste materials requires a permit.
- The City would adopt and enforce use restrictions, subject to CVFPB's approval and, as a minimum, would restrict public access to designated areas and prohibit equestrian and vehicular access.
- Permanent signs would be provided at all trail access points to levees and at periodic intervals along trails located on levees identifying the trail as a "levee maintenance road" and instructing users to "watch for patrolling vehicles."

In addition to the trail itself, other amenities on trail corridors may be benches, directional and interpretive signage, access gates, emergency call boxes, lighting, and refuse receptacles. All amenities would be subject to approval by the reclamation district and CVFPB and permits as required from the City. Independent environmental documentation may exist or would be developed for some of these projects as necessary. Specific proposed trail projects known at this time are noted below.

- **Recreation Corridor 1—Sacramento River/Barge Canal.** The Parks Master Plan provides for a recreation corridor along the entire length of the Sacramento River. This corridor is approximately 13.1 miles long and occupies approximately 192 acres. It will provide a continuous recreation corridor along the entire length of the Sacramento River within the city limits. A portion of this corridor has already been constructed along the urban waterfront, and is

commonly referred to as the River Walk Park, often shortened to just Riverwalk or Promenade. In the future, this path will extend from the water's edge to include the publicly owned right-of-way for the existing sections of Riverwalk, the future extension of Riverwalk from the Tower Bridge south to the Pioneer Bridge, and interior paths in other areas along the Sacramento Riverfront. It will link the city's community parks, businesses, and residential areas. In the southern portion of the city, the path will use the South River Road alignment once this road is replaced by a new off-levee arterial. Construction of a bicycle and pedestrian-friendly bridge crossing is proposed at the extension of River Road over the River Road Bridge to maintain the continuity of the corridor. The design criteria for the Recreation Corridor are outlined in the Southport Planning and Design Criteria.

- **Triangle Plan Area (Bridge District).** The Triangle Plan Area is approximately 188 acres bounded by State Route (SR) 275 on the north and west, Business 80 on the south, and the Sacramento River on the east (Figure 2-21). The waterfront of the Triangle Plan Area (now known as Bridge District) includes a promenade that will be a minimum of 20 feet wide to accommodate a foot path and bicycle path, with an additional 6 feet of furnishing zone (for park benches and other features). The elevation of the promenade will be 35.5 feet, and it will be sloped away from the river bank to allow water runoff to be collected by the City stormwater system. The promenade will run the entire length of the Triangle Plan Area. See other Triangle Plan Area descriptions under Riverside Parks and Developed Water Access.
- **Recreation Corridor 5—Deep Water Ship Channel.** The Parks Master Plan provides for a recreation corridor along the DWSC. This recreation corridor is approximately 5.3 miles long and will occupy approximately 123 acres. This corridor will tie into Recreation Corridor 1 at the southern city limit forming a loop system. It also will connect to Recreation Corridor 4, creating an additional loop. Approximately 2.25 miles of this corridor are along the DWSC and may be constructed part of the WSLIP.
- **Sacramento Bypass Corridor.** This corridor is approximately 1.2 miles long and will occupy 2.4 acres. It will tie into Recreation Corridor 1 at the northern city limits.
- **Yolo Bypass Corridor.** This corridor is approximately 3.8 miles long and will occupy 7.3 acres. It will tie into the Sacramento Bypass corridor.
- **South Cross Levee.** This corridor is approximately 1.2 miles long and will occupy 2.3 acres. It will tie into Recreation Corridor 1 and Recreation Corridor 5.

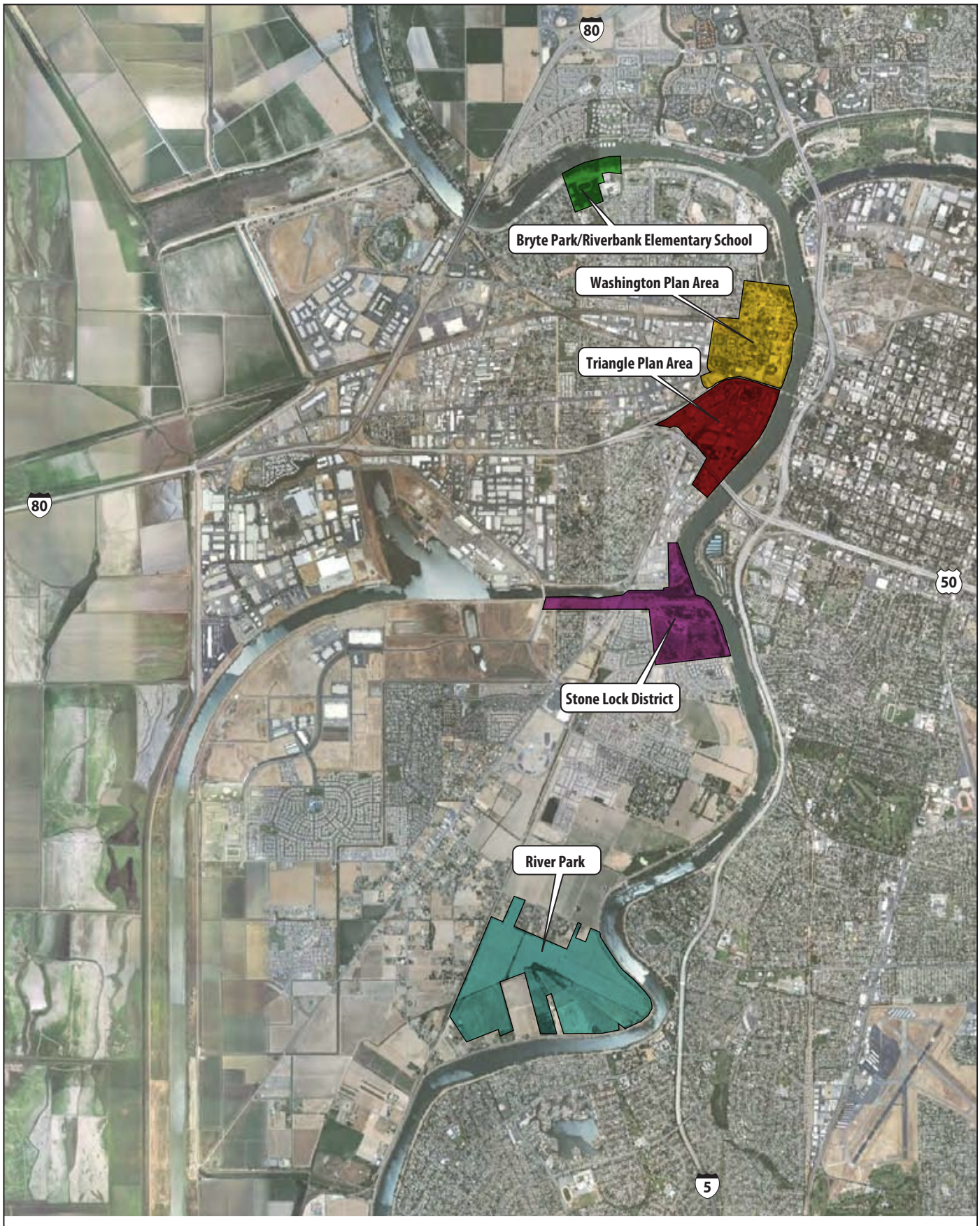
2.6.1.1.3 Operations and Maintenance

O&M activities for paved trails may include annual mechanical sweeping and cleaning, annual replacement and smoothing of the shoulder, annual inspection for pavement integrity, crack filling every several years, and cleaning and repairing signage and access controls. Other O&M for paved trails and O&M for unpaved trails would be the same as described as for typical levee practices under in-place levee raise.

2.6.1.2 Recreation Program: Riverside Parks

2.6.1.2.1 Objective

The water corridors in and around West Sacramento provide opportunities for fishing, picnicking, wildlife viewing, outdoor education, and other passive recreation. Interspersed along water



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Figure 2-21
Riverside Parks Location Map

corridors are future parks in the planning process or existing parks proposed for improvement. Riverside parks, in both established and new neighborhoods, are a key element in meeting recreation demands within the city.

2.6.1.2.2 Design and Construction

Riverside parks, which may occur on the landside or waterside of the levee, would be subject and adhere to reclamation district and CVFPB standards for encroachments, consistent with trails described above. Park amenities may include the following elements:

- turf, plantings, and other managed vegetation;
- tables, benches, and similar furnishings;
- water fountains;
- access controls such as gates, bollards, and fencing;
- directional and interpretive signage;
- paving for pedestrian circulation and parking areas;
- paved or unpaved landings or benches;
- lighting and call boxes;
- non-habitable structures such as restrooms, gazebos, kiosks, and overlooks; and
- play and fitness structures.

All amenities would be subject to approval by the reclamation district and CVFPB, and permits as required from the City. Independent environmental documentation may exist or would be developed for some of these projects as necessary. Specific riverside park projects known at this time are noted below (Figure 2-21).

- **Bryte Park/Riverbank Elementary School.** This existing park lies in the northernmost portion of the Sacramento River North Levee. Proposed expansion plans include adding 23 acres to this park that would connect it to the Sacramento River and provide formalized public access with pathways, picnic areas, and connection to the riverfront recreation corridor.
- **Washington Plan Area.** The Washington Plan Area is a 194-acre urban area near the northeast corner of the city of West Sacramento. It is bounded by Tower Bridge Gateway on the south, the Sacramento River on the east, A Street on the north, and portions of Sixth and Eighth Streets on the west. Waterfront features in this planning area include the Broderick Boat Launch north of the I Street Bridge. The Riverwalk Promenade extends along the full length of the riverfront park. The Broderick Boat Launch and Raley's boat dock are at the water's edge to serve private boating enthusiasts and potential water taxi service. Enhancements to these existing facilities may include terraced landscape areas, terraced steps, and a riparian habitat zone.
- **Triangle Plan Area.** A riverfront park along the length of the Bridge District will provide views of the Sacramento River and the downtown Sacramento skyline from the Riverwalk Promenade. Waterfront access will be provided by a variety of stairways, on-water walkways and foot trails at select locations. The riverfront park will be designed to incorporate riparian habitat zones or terraced overlooks. The riparian habitat zones will contribute another dimension to the waterfront experience and enhance wildlife habitat in the area. Pedestrian trails will be the only access below the levee crown. Pedestrian trails in these areas will be a maximum of 6 feet wide

and made of asphalt or concrete. Trail locations will not conflict with sensitive habitat areas (Triangle Specific Plan). Terraced walkways and patio areas will have large-canopy tree plantings such as sycamores and oaks, and pedestrian-only access trails. The terraced areas are intended for informal gathering spaces with views across the Sacramento River. In the central portion of the waterfront, a grand plaza will offer a venue for riverfront performances and events and an inviting waterfront park during times when no events are in progress. To the south of the plaza will be a series of pathways, stairs, and terraced areas along the river's edge for informal access. A U-shaped floating walkway will provide water-level access from the levee top. Two or three piers are also planned to provide views of the river from the levee crown elevation. On the river embankment in the northern and southern reaches of the Triangle, the SRMP envisions the reestablishment of the river edge as a riparian habitat zone for both terrestrial and aquatic species. . See Triangle Plan Area descriptions under Trails and Developed Water Access.

- **Stone Lock District.** The Stone Lock District comprises about 220 acres of publicly owned land along the Port South Levee between Lake Washington and the Sacramento River, the Port North Levee from the Stone Lock to the Sacramento River confluence, and the Sacramento River North Levee and Sacramento River South Levee near the confluence of the Sacramento River with the barge canal. The City's Parks Master Plan and Riverfront Master Plan propose the creation of public recreation areas and open spaces along the District waterfronts as community and neighborhood parks for the City and amenities for the Sacramento region. These waterfronts occupy the southernmost end of the Sacramento North Levee, along the barge canal on the Port North and Port South Levees, and in the confluence area on the Sacramento River South Levee. The primary recreation element in the District would be Recreation Corridor 1, described above. Other recreation and open space uses along the District waterfronts are described below.

  The portion of the District along the Sacramento River North Levee and westernmost portion of the Port North Levee is called Stone Lock Bluff Community Park in the SRMP. Waterfront features within this area include a marina to take advantage of the inlet created by the barge canal and provide boat mooring off of the main river channel. This facility is envisioned as an "eco-marina" that would provide access to docks at specified locations between improved and protected riparian habitat zones. In addition to a marina, one or more riverfront restaurants or other commercial uses could be developed in this area, either floating or at the edge of the bluff to maximize views of the river. A small outdoor park completes the mixed use program at the bluff by providing public access to views of and across the river, as well as an outdoor gathering/event area to complement adjacent commercial development.

  The barge canal waterfront along the Port South Levee is intended for a range of features that provide public access to the water and support active and passive recreation. The uses envisioned for this location include a rowing and boating center with on-water dock and landside facilities (at the east end of the canal), viewing and fishing piers (at intervals along the canal), a neighborhood park (along the western portion of the canal) and a continuous bicyclist and pedestrian path along the bank top between Jefferson and Lake Washington Boulevards.

  The bank of the Port South Levee from Jefferson Boulevard to the confluence with the Sacramento River is intended for both recreational and cultural facilities, including a stepped amphitheater on the bank (east of the new roadway bridge) and a large waterfront gathering/community festival venue on terraces overlooking the river confluence. The iconic performance venue and primary civic gathering space will be connected by a formal pedestrian promenade at the levee top.

Southward from the barge canal along the Sacramento River South Levee, waterside recreation facilities include on-levee and lower bank trails, river-level landings for access to the water, elevated viewing piers and picnic areas. These waterside recreation features will be connected by bicyclist and pedestrian paths along the waterfront and accessible at occasional parking areas on or near the levee. (Shpak pers. comm.)

- **River Park.** Renamed as River Park by the surrounding residential development, Southport Community Park is approximately 40 acres in the southeastern Southport community along the Sacramento River South Levee. This riverfront community park will be connected with Recreation Corridor 1, described above. The landside park will include a community center and pool, tennis club, playground, and disc golf course.

2.6.1.2.3 Operations and Maintenance

O&M activities for parks may include annual inspection and restoration, weekly cleaning, weekly vegetation management, and other activities typical for municipal park facilities.

2.6.1.3 Recreation Program: Developed Water Access

2.6.1.3.1 Objective

The city's waterways not only provide an opportunity for passive recreation and enjoying the corridor as a visual amenity but also are attractive for direct physical access for water-based activities. Developed access features provide the infrastructure for safe, managed use.

2.6.1.3.2 Design and Construction

Water access amenities are subject to stringent standards and review in order to ensure flood management objectives and performance are not compromised. Developed access within reclamation district easements is subject to approval by the local reclamation district and CVFPB and generally requires submittal of plans for proposed work with an application to CVFPB for a permit. Developed access within floodways, therefore, would be consistent with the Standards for Encroachments (April 1976), and Policy on Bicycle Trails on Levees, adopted June 21, 1991, as subject to CVFPB approval.

The following information is a summary based on CVFPB requirements and would be adhered to under the WSLIP.

Steps on Levees

- Access steps on the riverside or landside of the levee must be constructed of concrete, rock, or brick embedded in concrete, and must be built flush with the levee slope. Cuts in the slope would not exceed 12 inches in depth. Steps would be a maximum of 4 feet in width and would not extend above the levee crown.
- Existing stone protection, if disturbed, would be restored to original condition.
- Wooden steps may be permitted at locations where the landslide slope of the levee is landscaped under permit and maintained by the owner. Wooden steps must be constructed on, not in, the levee slope.

- A ramp, 6 inches wide, should be constructed adjacent to the steps to facilitate transport of bicycles along the steps.

Walkways on Levees

- Concrete and wooden walkways with handrails are permitted on both sides of levees if they do not unduly interfere with levee maintenance.
- The bottom of the walkway stringers on the riverside slope must be 2 feet above the design floodplain elevation.
- Existing stone protection, if disturbed, would be restored to its original condition. Handrails may not be constructed on the levee crown.
- On a levee with a crown width less than 14 feet, handrails must be a minimum of 8 feet from the levee centerline. Walkway supports must be constructed to minimize the possibility of catching drift.

Other access amenities may include pedestrian pathways and ramps, gangways, docks, piers, boat launch ramps, site furnishings, directional and interpretive signage, access gates, emergency call boxes, lighting, and refuse receptacles. All amenities would be subject to approval by the reclamation district and CVFPB and permits as required from the City. Independent environmental documentation may exist or will be developed for some of these projects as necessary. Specific developed water access projects known at this time are noted below.

- **Washington Plan Area.** See description in section above (2.6.1.2.2).
- **Triangle Plan Area (Bridge District).** The Bridge District includes several waterfront features that are intended to function as the front yard to the urban core of the city. Streets and open spaces in the area will be oriented to encourage free movement to, from, and along the waterfront so that it may be enjoyed to the fullest (Triangle Specific Plan). The Riverwalk Promenade will run the full length of the waterfront in the Triangle Plan Area. As stated above under riverside parks, a grand plaza is proposed. The SRMP proposes two types of pier structures for the promenade. One is a floating visitor boat dock that would provide visitor access and the second is a fixed fishing platform. The floating dock would have hinged ramping structures to provide legally conforming access from the promenade to the dock, and fishing would be allowed on the downstream portion of the dock. The floating dock also would accommodate attractions such as a pool barge or floating restaurant attached to the inside (shore edge) of the dock structure. The other type of pier structure would be high-level overlook and fishing piers. These structures would extend from the promenade level out over the embankment to the water's edge, using a cantilever structure to the extent feasible in order to minimize piers in the embankment or in the water (SRMP). See other Triangle Plan Area descriptions under Trails and Riverside Parks.
- **Stone Lock District.** See description in section above (2.6.1.2.2).
- **River Park.** The community park improvements will include an in-channel marina in the same location as the defined marina on the site. The facility will consist of open boat slips, a floating administration/restaurant building, and automobile parking (Figure 2-22).

2.6.1.3.3 Operations and Maintenance

O&M activities for developed water access may include annual inspection and restoration, weekly cleaning, weekly vegetation management, and other activities typical for municipal park facilities.

2.6.1.4 Recreation Program: Special Projects

2.6.1.4.1 Objective

The city's waterways provide a unique setting for special project venues. The City plans to partner with other public and private entities to facilitate development of cultural, recreation, education, and entertainment facilities along the Sacramento River and other waterways.

2.6.1.4.2 Design and Construction

Special projects represent a more intensive level of development and use and would be subject to special permits and project-specific conditions. Improvements for special projects are location-specific and would be developed on a case-by-case basis, each likely necessitating independent environmental documentation and permitting. One such project at this time is relocation of the California Indian Museum from Sutter's Fort in Sacramento to a parcel on the Sacramento River in West Sacramento, described below.

- **California Indian Heritage Center.** On June 18, 2008, the City approved an agreement to contribute a 43-acre parcel on the riverfront to California State Parks for use as the new California Indian Heritage Center. The center will replace the California Indian Museum currently located in a small building at Sutter's Fort State Historic Park in Sacramento. This entire property is located on the waterside of the existing levee. California State Parks is developing a General Plan for the facility, which is planned to include a library, archives, tribal treasures exhibit space, resident artist space, offices, classrooms, a café, museum store, amphitheatre and event space, indigenous gardens, trails, public access to the Sacramento River, and parking. Though none of these elements is proposed for construction as part of the WSLIP, the City's agreement with California State Parks stipulates that WSAFCA may use some of the property for WSLIP habitat mitigation.

2.6.1.4.3 Operations and Maintenance

O&M activities for special projects are not known at this time but would entail intensive daily management, typical for public institutions with high visitor use.

2.7 Summary of Program Improvements by Reach

Based and building on the information presented earlier in this chapter, Table 2-17 summarizes the potential flood and recreation improvements on a reach-by-reach basis.

Table 2-17. Summary of Program Improvements by Reach

Improvement Group	Improvement	Reach: Sacramento River North Levee	Sacramento River South Levee	Port North Levee	Port South Levee	South Cross Levee	DWSC West Levee	DWSC East Levee	Yolo Bypass Levee	Sacramento Bypass Levee
Flood : Levee Height	Flood wall			✓	✓		✓			
	Levee raise (in place)	✓	✓		✓	✓	✓			
	Levee raise (adjacent)	✓	✓		✓	✓	✓			
	Levee raise (full)	✓	✓		✓	✓	✓			
	Closure structure	✓		✓	✓				✓	
Flood: Seepage Control	Interior drain					✓				
	Jet grouting	✓								
	Relief wells	✓	✓					✓		✓
	Seepage berm					✓				✓
	Sheet pile wall	✓					✓	✓	✓	
	Slurry cutoff wall	✓	✓		✓	✓	✓	✓	✓	✓
Flood: Slope Stability/ Geometry	Slope flattening	✓	✓		✓	✓		✓		✓
	Stability berm		✓						✓	✓
Flood: Erosion Control	Rock slope protection	✓	✓				✓	✓		
Flood: Other	Setback levee		✓							
	Vegetation removal	✓	✓	✓	✓					
Recreation	Trails	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Riverside parks	✓	✓	✓	✓			✓		
	Developed water access	✓		✓	✓			✓		
	Special projects	✓								

2.8 Project-Level Alternatives

2.8.1 Introduction and Project Phasing

Up to this point, this chapter has described program-level improvements for flood management and recreation. This section summarizes project-level improvements in the form of two EIPs. These EIPs are being analyzed in a parallel process with the WSLIP to address critical areas where the levee deficiency is well-defined and the most suitable treatments are known, applying the project-level criteria presented earlier in this chapter.

Future EIPs may be proposed and analyzed based on the project-level screening criteria in Section 2.2.2.3. In addition to the project-level screening criteria in Section 2.2.2.3, other factors for



Central Parkway: An illustrative plan

(Note: This illustrative plan is conceptual only, and is subject to refinement by Richland Planned Communities Inc. based on consultation with the City of West Sacramento Parks and Recreation Department.)

Figure 2-22
Proposed River Park

project selection may be considered such as managing flood risk between the northern and southern basins of the city, seeking projects that provide advanced or concurrent environmental mitigation, and logical and compatible phasing with other projects occurring around the city. A phasing schedule has not yet been developed, but it is reasonable to expect that one to two EIPs may be pursued per year, similar to the I Street Bridge EIP completed in 2008 and the two presently proposed EIPs described in this document. An EIP was not pursued for the 2009 construction season while the WSLIP was under planning and design development.

At this time, WSAFCA is proposing the EIPs for sites on the Sacramento Bypass and Sacramento River North levee reaches, referred to as the CHP Academy EIP and The Rivers EIP, respectively. These sites have both had observed past performance issues, with evidence of seepage at both sites (and possible boils at The Rivers). The sites are analyzed at a project level in this EIS/EIR. Table 2-18 provides an overview of the deficiencies and upgrades proposed at these sites for flood management. Recreation improvements are also proposed.

Table 2-18. CHP Academy and The Rivers EIP Alternatives

EIP	Program Component	Applicant Preferred Alternative	Alternative B
CHP Academy	Flood	Slurry cutoff wall and waterside slope flattening	Stability berm with interior drain, and relief wells
	Recreation	Paved bike trail	Paved bike trail
The Rivers	Flood	DSM cutoff wall and landside slope flattening (landside hinge point stationary, kick out toe)	Deep sheet pile wall and landside slope flattening
	Recreation	Paved bike trail, paved pedestrian trail, paved landing, landside levee embankment ramps	Paved bike trail, paved pedestrian trail, paved landing, landside levee embankment ramps

2.8.2 CHP Academy EIP

2.8.2.1 Introduction

The CHP Academy EIP encompasses approximately 6,500 feet of the Sacramento Bypass Levee, (Figure 2-23). The easternmost 1,200 feet of the waterside slope of the levee (adjacent to the weir) is lined with a concrete cap. This concrete cap prevents the levee from eroding when the weir is open and water is allowed to enter into the Sacramento Bypass from the Sacramento River. A stability berm and an interior drain system installed as part of the West Sacramento Project in 1999 runs the length of the levee on the landside. Deficiencies at this site are through-seepage, geometry, and under-seepage, along with short reaches of instability.

Two project alternatives for the CHP Academy EIP have been carried forward for analysis in this EIS/EIR. These alternatives are summarized in Table 2-19. A complete screening and description of the CHP Academy project-level flood and recreation alternatives are discussed in detail in Chapter 4.

Table 2-19. CHP Academy EIP Flood Improvement Alternatives

EIP	Station Ranges		Deficiencies	Applicant Preferred Alternative Levee Treatments	Alternative B Levee Treatments
CHP Academy EIP (18+50 to 64+78)	18+00	60+00	Through-seepage, under-seepage, stability, geometry	Slurry cutoff wall and waterside slope flattening	Stability berm with interior drain and relief wells
	60+00	64+78	Through-seepage, stability, geometry	Slurry cutoff wall and waterside slope flattening to weir	Stability berm with interior drain and relief wells

Source: (Bourgeois pers. comm.)

2.8.3 The Rivers EIP

2.8.3.1 Introduction

The Rivers EIP area is approximately 4,500 feet long and is located on the Sacramento River North Levee, just north of the confluence of the Sacramento and American Rivers, including part of The Rivers residential development (Figure 2-24). Levee deficiencies at this site include geometry, stability, through-seepage, and under-seepage.

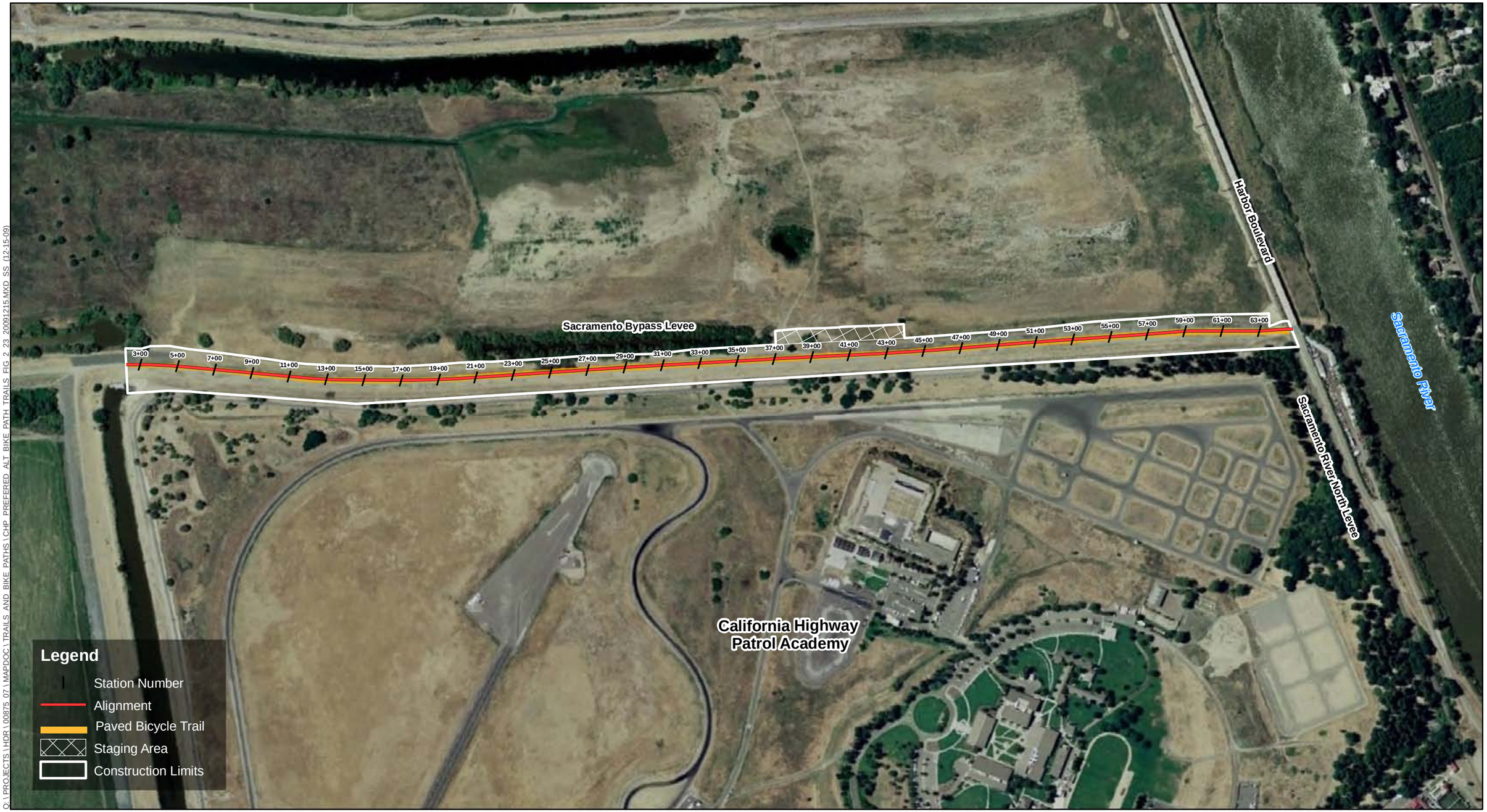
Bryte Park/Riverbank Elementary School and The Rivers residential development are located south of The Rivers EIP. The DWR maintenance yard is located directly west of the site. A leaking underground storage tank for gasoline and diesel was discovered and removed from the DWR maintenance yard in 1994. Monitoring and sampling of groundwater and soil at and in the vicinity of the site of contamination began in September 2001 with the intent to explore the extent of the fuels-impacted groundwater and provide data on risk to sensitive receptors. A small portion of the plume is located within the footprint of western end of the project site (see Section 3.3, Water Quality and Groundwater Resources). DWR has created a work plan with the Regional Water Quality Control Board (RWQCB) to continue to monitor the site, which includes the installation of additional Two project alternatives for The Rivers EIP have been carried forward for analysis in this EIS/EIR. These alternatives are summarized in Table 2-20. A complete screening and description of The Rivers EIP project-level flood and recreation alternatives are discussed in detail in Chapter 5.

Table 2-20. The Rivers EIP Flood Improvement Alternatives

EIP	Station Ranges		Deficiencies	APA Levee Treatments	Alt B Levee Treatments
The Rivers (70+00 to 115+00)	70+00	115+00	Through-seepage, under-seepage, stability, geometry	Slurry cutoff wall and landside slope flattening	Deep sheet pile wall and landside slope flattening

Source: Nordvik pers. comm..

2.9 Environmental Commitments



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Flood Control Improvements

Station Interval	APA Levee Treatments	Alt B Levee Treatments
2+20 to 18+00	Waterside slope flattening	Stability berm, interior drain, and relief wells
18+00 to 64+00	Waterside slope flattening and slurry cutoff wall	Stability berm, interior drain, and relief wells

N

0 250 500 1,000 Feet

Figure 2-23
The CHP Academy EIP Applicant Preferred Alternative and Alternative B

Note: This figure is the same as 4-1 and is provided here for your convenience.



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Flood Control Improvements

Station Interval	APA Levee Treatments	Alt B Levee Treatments
70+00 to 90+00	DSM cutoff wall and landside slope flattening	Deep sheet pile wall and landside slope flattening
90+00 to 116+00	Slurry cutoff wall and landside slope flattening	Sheet pile wall and landside slope flattening

N

0 150 300 600 Feet

Figure 2-24
The Rivers EIP Applicant Preferred Alternative and Alternative B

Note: This figure is the same as 5-1 and is provided here for your convenience.

Environmental commitments are measures incorporated as part of the program and project description, meaning they are proposed as elements of the proposed action and are to be considered in conducting the environmental analysis and determining effects and findings. The purpose of environmental commitments is to reflect and incorporate best practices into the program and project that avoid, minimize, or offset potential environmental effects. *Note: The term* mitigation *is specifically applied in this EIS/EIR only to designate measures required to reduce environmental effects triggering a finding of significance.* These best practices tend to be relatively standardized and compulsory; they represent sound and proven methods to reduce the potential effects of an action. The rationale behind including environmental commitments is that the project proponent commits to undertake and implement these measures as part of the project in advance of effect findings and determinations in good faith to improve the quality and integrity of the project, streamline the environmental analysis, and demonstrate responsiveness and sensitivity to environmental quality. Environmental commitments apply to each and all improvements other than the No Action Alternative.

To avoid and minimize construction-related effects, WSAFCA would implement the following environmental commitments at the program and project levels to reduce or offset short-term, construction-related effects. Measures have been developed for each of the topics below, to be applied in the program- and project-level resource analyses (Chapters 3, 4, and 5).

2.9.1.1 Raptors

For construction between March 1 and August 1, WSAFCA will perform preconstruction surveys to determine whether raptors are nesting or roosting at or adjacent to staging or construction areas. In the event nesting or roosting raptors are identified, WSAFCA will coordinate with DFG to identify measures to ensure raptors are not adversely affected. These measures may include implementation of suitable buffers and phasing of construction.

2.9.1.2 USACE Levee Vegetation Guidance

In complying with the USACE levee vegetation guidance, WSAFCA will, to the greatest extent possible, avoid and minimize the removal of vegetation that provides habitat for endangered species such as anadromous fish species. Where conflicts may arise between the USACE levee vegetation guidance and compliance with the City's policies to protect trees and riparian vegetation, coordination between the appropriate parties will be conducted to discuss a mutually agreeable approach to achieve compliance, and/or to decide to pursue a variance from the USACE.

2.9.1.3 Protected Trees and Riparian Trees

WSAFCA will comply with the City tree ordinance requirements and will implement the following measures.

- Protect heritage trees that occur in the vicinity of the project site and outside the construction area by installing protective fencing. Protective fencing will be installed along the edge of the construction area (including temporary and permanent access roads) where construction will occur within 20 feet of the dripline of an oak or native tree 6 inches or more in diameter at 4.5 feet above the ground (as determined by a qualified biologist or arborist).

- Provide signs along the protective fencing at a maximum spacing of one sign per 100 feet of fencing stating that the area is environmentally sensitive and that no construction or other operations may occur beyond the fencing.
- Retain a certified arborist to perform any necessary pruning of oak or native trees along the construction area, in accordance with International Society of Arboriculture standards.
- Prepare tree and riparian habitat mitigation and monitoring plans. Potential mitigation areas will be evaluated by a qualified restoration ecologist, biologist, or certified arborist to determine their suitability to support the target native tree species.

2.9.1.4 Invasive Plant Species Prevention

The program proponent will implement one or more of the following actions to avoid and minimize the spread or introduction of invasive plant species. In addition, the program proponent will coordinate with the Yolo County Agricultural Commissioner to ensure that the appropriate BMPs are implemented for the duration of the construction of proposed projects.

- Clean construction equipment and vehicles in a designated wash area prior to entering and exiting the project site.
- Educate construction supervisors and managers about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations.
- Treat small, isolated infestations with eradication methods that have been approved by or developed in conjunction with the Yolo County Agricultural Commissioner to prevent and/or destroy viable plant parts or seeds.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use native, non-invasive species or non-persistent hybrids in erosion-control plantings to stabilize site conditions and prevent invasive plant species from colonizing.
- Use weed-free imported erosion-control materials (or rice straw) in upland areas.
- One year after construction, conduct a monitoring visit to ensure that no new occurrences have established.

2.9.1.5 Stormwater Pollution Prevention Plan

Because ground disturbance for each project would be greater than 1 acre, WSAFCA will obtain coverage under the U.S. Environmental Protection Agency's (EPA's) National Pollutant Discharge Elimination System (NPDES) general construction activity stormwater permit. The Central Valley RWQCB administers the NPDES storm water permit program in Yolo County. Obtaining coverage under the NPDES general construction activity permit generally requires that the project applicant prepare a stormwater pollution prevention plan (SWPPP) that describes the best management practices (BMPs) that will be implemented to control accelerated erosion, sedimentation, and other pollutants during and after project construction.

The specific BMPs that will be incorporated into the erosion and sediment control plan and SWPPP will be determined during the final design phase of the selected improvement, and will be prepared by the construction contractor in accordance with the California RWQCB Field Manual. However, the plan likely will include, but not be limited to, one or more of the following standard erosion and sediment control BMPs.

- **Timing of construction**. The construction contractor will conduct all construction activities during the typical construction season to avoid ground disturbance during the rainy season.
- **Staging of construction equipment and materials**. To the extent possible, equipment and materials will be staged in areas that have already been disturbed.
- **Minimize soil and vegetation disturbance**. The construction contractor will minimize ground disturbance and the disturbance/destruction of existing vegetation. This will be accomplished in part through the establishment of designated equipment staging areas, ingress and egress corridors, and equipment exclusion zones prior to the commencement of any grading operations.
- **Stabilize grading spoils**. Grading spoils generated during the construction will be temporarily stockpiled in staging areas. Silt fences, fiber rolls, or similar devices will be installed around the base of the temporary stockpiles to intercept runoff and sediment during storm events. If necessary, temporary stockpiles may be covered with an appropriate geotextile to increase protection from wind and water erosion.
- **Install sediment barriers**. The construction contractor may install silt fences, fiber rolls, or similar devices to prevent sediment-laden runoff from leaving the construction area.
- **Stormwater drain inlet protection**. The construction contractor may install silt fences, drop inlet sediment traps, sandbag barriers, and/or other similar devices.
- **Permanent site stabilization**. The construction contractor will install structural and vegetative methods to permanently stabilize all graded or otherwise disturbed areas once construction is complete. Structural methods may include the installation of biodegradable fiber rolls and erosion control blankets. Vegetative methods may involve the application of organic mulch and tackifier and/or the application of an erosion control seed mix. Implementation of a SWPPP will substantially minimize the potential for project-related erosion and associated adverse effects on water quality.

2.9.1.6 Temporary Visual Barriers between Construction Zones and Residences

The program proponent or the contractor will install fencing (such as chain link with slats or fencing made of windscreen material) or other structures where determined appropriate to obstruct undesirable views of construction activities from residences' backyards and front yards that abut the project sites. The fencing will be approximately 7 feet high to help maintain the privacy of residents.

2.9.1.7 Noise-Reducing Construction Practices

WSAFCA will require the construction contractor to follow noise-reducing construction practices such that noise from construction does not exceed applicable City noise ordinance limits or, at a minimum, implements measures to reduce noise to acceptable levels. Measures that can be used to limit noise may include but are not limited to the following actions:

- locating equipment as far as practical from noise-sensitive uses,
- using sound control devices such as mufflers on equipment,
- using equipment that is quieter than standard equipment,

- using noise-reducing enclosures around noise-generating equipment, and
- provide for temporary relocation if noise will exceed acceptable levels for an extended duration (as discussed below).

2.9.1.8 Property Acquisition Compensation for Loss of Business, and Temporary Resident Relocation Plan

Several of the improvements proposed under the program will require land acquisition and may require removal of residences to accommodate the expanded footprint of the levee system. Permanent land acquisition may be necessary for implementation of adjacent levee raises, full levee raises, relief wells, seepage berms, slope flattening, stability berms, and setback levees. In addition, sufficient land will need to be acquired to establish an appropriate maintenance corridor at the landside toes of all improved levees. Permanent acquisition, relocation, and compensation services will be conducted in compliance with Federal and state relocation laws, which are the Uniform Act of 1970 (42 USC 4601 *et seq.)* and implementing regulation, 49 CFR Part 24; and California Government Code Section 7267 *et seq.* These laws require that appropriate compensation be provided to displaced landowners and tenants, and that residents be relocated to comparable replacement housing.

In some cases, construction of levee improvements may result in temporary disruption of utilities (water, telephone, electricity, gas, and sanitary sewer) or loss of vehicle or pedestrian access could occur for durations too lengthy for convenient day-to-day living and/or construction-related noise may occur outside City ordinance limits. During some periods of time, construction activities may be directly adjacent to homes. In these cases, WSAFCA will provide assistance for residents to temporarily relocate during construction activities and provide compensation to residents for reasonable rent and living expenses incurred due to relocation. WSAFCA will develop a Temporary Resident Relocation Plan to guide temporary relocation services and compensation. The Temporary Resident Relocation Plan will, at a minimum, serve the following functions:

- outline the process for providing notice of relocation,
- provide guidelines for relocation services and compensation,
- ensure that 24-hour security for vacated homes is provided,
- provide for temporary occasional access of vacated homes by residents (for long-duration construction periods, and
- ensure all compensation and relocation activities are conducted in compliance with Federal and state relocation laws, which are identified above.

2.9.1.9 Traffic Control and Road Maintenance Plan

WSAFCA, in coordination with relevant City and county public works departments, will develop and implement traffic control plan(s) for the proposed project.

A traffic control plan describes the methods of traffic control to be used during construction. All on-street construction traffic will be required to comply with the local jurisdiction's standard construction specifications. The plan will reduce the effects of construction on the roadway system in the project area throughout the construction period. Construction contractors will follow the standard construction specifications of affected jurisdictions and obtain the appropriate

encroachment permits, if required. The conditions of the encroachment permit will be incorporated into the construction contract and will be enforced by the agency that issues the encroachment permit.

Road closures may be of varying duration, measured in hourly periods or up to several weeks in some instances. Proposed lane closures during the a.m. and p.m. commuting hours will be coordinated with the appropriate jurisdiction and minimized during the morning and evening peak traffic periods. Commuters will be notified of the construction schedule to help avoid potential disruptions. Standard construction specifications also typically limit lane closures during commuting hours. Lane closures will be kept as short as possible and detour signage, if detours are available, will be posted around construction sites. Advance notice signs of upcoming construction activities will be posted at least 1 week in advance so that road and rail users are able to avoid traveling through the construction area during these times or at least aware of inconveniences.

Safe pedestrian and bicyclist access, if any exists on the current roadway, will be maintained in or around the construction areas at all times. Construction areas will be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment will be located as far away as possible from areas where bicyclists and pedestrians are present. WSAFCA will notify and consult with emergency service providers to maintain emergency access and facilitate the passage of emergency vehicles on city streets.

WSAFCA will provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, WSAFCA will provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.

The traffic control plan will also include the information listed below.

- A street layout showing the location of construction activity and surrounding streets to be used as detour routes, including special signage.
- A tentative start date and construction duration period for each phase of construction.
- The name, address, and emergency contact number for those responsible for maintaining the traffic control devices during the course of construction.

Additionally, the traffic control plan will include the stipulations listed below.

- Access for driveways and private roads will be maintained, except for brief periods of construction, in which case property owners will be notified.
- Traffic controls may include flag persons wearing Occupational Safety and Health Administration-approved vests and using a Stop/Slow paddle to warn motorists of construction activity.
- Access to transit services will be maintained and public transit vehicles will be detoured.
- Contractors will be informed in writing of appropriate routes to and from construction sites, and weight and speed limits for local roads used to access construction sites. All such written notifications will be submitted to the City of West Sacramento Planning Department.

WSAFCA will assess damage to roadways used during construction and will repair all potholes, fractures, or other damages.

2.9.1.10 Coordination to Ensure Minimal Overlap in Disturbances to Traffic during WSLIP Construction

WSAFCA will coordinate with the City prior to starting any construction activities to determine if any other projects would disrupt traffic or require detours affecting the same roads. If so, WSAFCA will modify haul routes, timing, or otherwise work with the City and other project proponents to minimize cumulative disruptions to roadways.

2.9.1.11 Coordination of Construction Periods with Railroad Service Officials

WSAFCA will coordinate directly with railroad officials, including Union Pacific Railroad, Amtrak, Sierra Northern Railway, and Burlington Northern Santa Fe, regarding the timing of temporary railroad closures and/or removals as necessary during program implementation. WSAFCA will ensure minimization of any disruption to service by utilizing the most recent and available construction methods to expedite activities. Because the temporary loss of service along some railroads could result in financial loss for various companies that use the rail lines, WSAFCA will ensure that the appropriate entities are compensated for monetary losses attributed to the reduction in rail service.

2.9.1.12 Coordination of Construction Periods with the Port of West Sacramento

WSAFCA will ensure that the contractor coordinates construction periods with the Port of West Sacramento in order to achieve the following objectives:

- ensure shipping schedules are not affected,
- avoid conflict between any in-water work in the DWSC and commercial vessel navigation, and
- ensure that vehicle access to the port is maintained during construction.

2.9.1.13 Coordination of Construction Periods with CHP

WSAFCA will coordinate directly with CHP regarding the timing and nature of construction activities near the CHP Academy in order to achieve the following objectives:

- ensure training and other activities are not affected by construction, and
- ensure safety and security is not compromised in any way,

2.9.1.14 Notification of Construction Area Closure

WSAFCA will ensure that the contractor posts notice of construction activities and intended days of construction area closure at least 30 days in advance of closures in and near formal recreation facilities. The contractor will post notice of construction activities and closures at least 10 days in advance in all other areas. Notice should be posted adjacent to access roads, and signs will be at least 3 square feet in size and provide a contact for questions regarding project construction. WSAFCA also will ensure that the construction area is fenced off to keep members of the public out of harm's way.

2.9.1.15 Reconstruction of Affected Formal Park Facilities

If removal of formal park facilities is required during construction of any of the levee improvements, WSAFCA will ensure to the greatest degree possible that these facilities are replaced on site after construction. If on-site replacement is not possible, WSAFCA will work with the City's Department of Parks and Recreation to determine an appropriate location for facility replacement. This environmental commitment applies (but is not limited) to the trail connecting the Yolo Causeway Bicycle Path to West Capitol Avenue at Roland Hensley Bike Park, the Barge Canal Recreational Access and associated hand-launch boat ramp, and the soccer field and running track at Bryte Park.

2.9.1.16 Preservation of Marina and Boat Launch Access

WSAFCA will ensure that access to marina and boat launch facilities is maintained to the greatest degree possible during construction of levee improvements. If access restrictions cannot be avoided, WSAFCA will post notice regarding the location of alternative marina and boat launch facilities at least 30 days in advance of closure and will ensure that closure time is minimized and/or provide alternate access routes to the facilities.

2.9.1.17 Minimization of Construction-Related Effects on Navigation

During any in-channel construction activities, WSAFCA will implement the following measures to ensure that construction-related effects on navigation and recreational boating are minimized:

- avoid or limit construction during major summer holiday periods if possible or limited; and
- post warning signs and buoys at, upstream of, and downstream of all construction equipment, sites, and activities.

2.9.1.18 Approval for Broderick Boat Ramp Closure

If closure of the Broderick Boat Ramp cannot be avoided during construction, WSAFCA will obtain approval for closure from the Department of Boating and Waterways. Prior approval for facility closure is a requirement of the City's grant agreement with the Department of Boating and Waterways.

2.9.1.19 Bentonite Slurry Spill Contingency Plan (Frac-Out Plan)

WSAFCA will ensure the contractor will prepare and implement a bentonite slurry spill contingency plan (BSSCP) for any excavation activities that use pressurized fluids (other than water). If the contactor prepares the plan, it will be subject to approval by USACE, NMFS, and WSAFCA before excavation can begin. The BSSCP will include measures intended to minimize the potential for a frac-out (short for "fracture-out event") associated with excavation and tunneling activities; provide for the timely detection of frac-outs; and ensure an organized, timely, and "minimum-effect" response in the event of a frac-out and release of excavation fluid (i.e., bentonite). The BSSCP will require, at a minimum, the following measures.

- If a frac-out is identified, all work will stop, including the recycling of the bentonite fluid. In the event of a frac-out into water, the location and extent of the frac-out will be determined, and the frac-out will be monitored for 4 hours to determine whether the fluid congeals (bentonite will usually harden, effectively sealing the frac-out location).

- NMFS, DFG, and the RWQCB will be notified immediately of any spills and will be consulted regarding clean-up procedures. A Brady barrel will be on site and used if a frac-out occurs. Containment materials, such as straw bales, also will be on site prior to and during all operations and a vacuum truck will be on retainer and available to be operational on site within notice of 2 hours. The site supervisor will take any necessary follow-up response actions in coordination with agency representatives. The site supervisor will coordinate the mobilization of equipment stored at staging areas (e.g., vacuum trucks) as needed.
- If the frac-out has reached the surface, any material contaminated with bentonite will be removed by hand to a depth of 1-foot, contained, and properly disposed of, as required by law. The drilling contractor will be responsible for ensuring that the bentonite is either properly disposed of at an approved Class II disposal facility or properly recycled in an approved manner.
- If the bentonite fluid congeals, no other actions, such as disturbance of the streambed, will be taken that will potentially suspend sediments in the water column.
- The site supervisor has overall responsibility for implementing this BSSCP. The site supervisor will be notified immediately when a frac-out is detected. The site supervisor will be responsible for ensuring that the biological monitor is aware of the frac-out, coordinating personnel, response, cleanup, regulatory agency notification and coordination to ensure proper clean-up, disposal of recovered material, and timely reporting of the incident. The site supervisor will ensure all waste materials are properly containerized, labeled, and removed from the site to an approved Class II disposal facility by personnel experienced in the removal, transport, and disposal of drilling mud.
- The site supervisor will be familiar with the contents of this BSSCP and the conditions of approval under which the activity is permitted to take place. The site supervisor will have the authority to stop work and commit the resources (personnel and equipment) necessary to implement this plan. The site supervisor will ensure that a copy of this plan is available (on site) and accessible to all construction personnel. The site supervisor will ensure that all workers are properly trained and familiar with the necessary procedures for response to a frac-out, prior to commencement of excavation operations.

2.9.1.20 Spill Prevention, Control, and Counter-Measure Plan

A spill prevention, control, and counter-measure plan (SPCCP) is intended to prevent any discharge of oil into navigable water or adjoining shorelines. WSAFCA or its contractor will develop and implement an SPCCP to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that will be taken in the event of a spill (e.g., an oil spill from engine refueling will be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures and spill response kits. It will also describe how and when employees are trained in proper handling procedure and spill prevention and response procedures.

WSAFCA will review and approve the SPCCP before onset of construction activities and routinely inspect the construction area to verify that the measures specified in the SPCCP are properly

implemented and maintained. WSAFCA will notify its contractors immediately if there is a non-compliance issue and will require compliance.

The Federal reportable spill quantity for petroleum products, as defined in 40 CFR 110, is any oil spill that:

- violates applicable water quality standards,
- causes a film or sheen on or discoloration of the water surface or adjoining shoreline, or
- causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the contractor's superintendent will notify WSAFCA, and WSAFCA will take action to contact the appropriate safety and cleanup crews to ensure that the SPCCP is followed. A written description of reportable releases must be submitted to the Central Valley RWQCB. This submittal must contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.

2.9.1.21 Implementation of Measures to Maintain Surface Water Quality and Groundwater Quality

If an appreciable spill has occurred and results determine that program activities have adversely affected surface or groundwater quality, a detailed analysis will be performed by a registered environmental assessor or professional engineer to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the WSAFCA and its contractors will select and implement measures to control contamination, with a performance standard that surface water quality and groundwater quality must be returned to baseline conditions.

2.9.1.22 Monitoring of Turbidity in Adjacent Water Bodies

WSAFCA or its contractor will monitor turbidity in the adjacent water bodies, where applicable criteria apply, to determine whether turbidity is being affected by construction and ensure that construction does not affect turbidity levels, which ultimately increase the sedimentation loads.

The Basin Plan contains turbidity objectives for the Sacramento River. Specifically, the plan states that where natural turbidity is between 5 and 50 Nephelometric turbidity units (NTUs), turbidity levels may not be elevated by 20% above ambient conditions. Where ambient conditions are between 50 and 100 NTUs, conditions may not be increased by more than 10 NTUs.

WSAFCA or its contractor will monitor ambient turbidity conditions upstream during construction. Monitoring will continue approximately 200 feet downstream of construction activities to determine whether turbidity is being affected by construction. Grab samples will be collected at a downstream location that is representative of the flow near the construction site. If there is a visible sediment plume being created from construction, the sample should represent this plume. Monitoring should occur hourly when construction encroaches into the Sacramento River. If

construction does not encroach into the river, the monitoring should occur once a week on a random basis.

If turbidity limits exceed Basin Plan standards, construction-related earth-disturbing activities will slow to a point that results in alleviating the problem. WSAFCA will notify the Central Valley RWQCB of the issue and provide an explanation of the cause.

2.9.1.23 Soil Supply Protection Measures

WSAFCA's first choice for fill or borrow material will be from a local commercial quarry or other permitted source. In the event that material is desired from a source that is not presently permitted, for reasons such as quality, proximity, or volume available, WSAFCA will implement soil supply protection measures.

- One such measure will be maximizing on-site use through gradation, placement, and treatment.
- Another measure will be the preservation and replacement of topsoil at borrow sites, so that they could be continued to be used for their current use or otherwise returned to their pre-project condition. As part of borrow operations, the upper 12 inches of topsoil would be set aside and replaced after project construction in each construction season. After the project is completed, the borrow site would be re-contoured and reclaimed.
- If potential borrow sites are identified within a 10,000-foot Airport Critical Zone, management of the grasslands created by borrow operations would be consistent with the Airport's *Wildlife Hazard Management Plan* (Sacramento County Airport System 2007).
- An additional measure would be independent environmental documentation and regulatory compliance, as required. Specific regulations related to soil resources are detailed in Section 3.4.2.1.

Chapter 3
Affected Environment and Environmental Consequences

3.1 Introduction

This chapter provides the Affected Environment and Environmental Consequences for the WSLIP.

The baseline environmental conditions assumed in the preparation of this chapter consist of the existing physical environment as of January 28, 2009, when WSAFCA published the Notice of Preparation (NOP) to prepare an EIR with the State Clearinghouse. USACE published a Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on January 27, 2009.

3.1.1 Resources

- Section 3.2 Flood Control and Geomorphic Conditions
- Section 3.3 Water Quality and Groundwater Resources
- Section 3.4 Geology, Seismicity, Soils, and Mineral Resources
- Section 3.5 Transportation and Navigation
- Section 3.6 Air Quality and Climate Change
- Section 3.7 Noise
- Section 3.8 Vegetation and Wetlands
- Section 3.9 Fisheries and Aquatics
- Section 3.10 Wildlife
- Section 3.11 Land Use and Agriculture
- Section 3.12 Socioeconomic and Community Effects
- Section 3.13 Environmental Justice
- Section 3.14 Visual Resources
- Section 3.15 Recreation
- Section 3.16 Utilities and Public Services
- Section 3.17 Public Health and Environmental Hazards
- Section 3.18 Cultural Resources

Section 3.2
Flood Control and Geomorphic Conditions

3.2.1 Introduction

This section presents the affected environment and environmental consequences related to hydrologic, hydraulic, geomorphic, and flood control issues associated with the program and project treatment alternatives for the WSLIP. The affected environment includes the applicable Federal and state regulations that govern construction and maintenance of the WSLIP and the hydrologic, hydraulic, and geomorphic environmental setting.

The environmental consequences section describes potential hydraulic, geomorphic, and flood control effects associated with the program and EIP project-level treatment alternatives. It describes the methods used to determine the effects of the programs and project alternatives and lists the thresholds used to conclude whether an effect would be significant. Effects were determined by using hydraulic modeling results, significance criteria set forth in the State CEQA Guidelines, and professional judgment. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

Implications of WSLIP program and project treatment alternatives for flood control and geomorphic conditions are also addressed within the context of the resources affected by the changes, most notably under Section 3.3, Water Quality and Groundwater Resources; Section 3.4, Geology, Seismicity, Soils, and Mineral Resources; Section 3.8, Vegetation and Wetlands; and Section 3.9, Fisheries and Aquatics. The key sources of data and information used in the preparation of this chapter are listed and briefly described below.

- *Historic Sediment Loads in the Sacramento–San Joaquin Delta*, California Department of Water Resources, October 1994
- *Assessment of Sediment Budget of Sacramento–San Joaquin Delta*, Northwest Hydraulic Consultants, 2003
- *North Delta Sedimentation Study,* Northwest Hydraulic Consultants, prepared for California Department of Water Resources, March 2006
- *Surficial Geologic Mapping and Geomorphic Assessment*, California Department of Water Resources Urban Levees, West Sacramento, California, William Lettis & Associates, April 2007
- *West Sacramento Levees System: Problem Identification Report, Erosion Assessment and Treatment Alternatives*, Draft for Review, Northwest Hydraulic Consultants, prepared for HDR, Inc./Jones & Stokes, September 2007
- *West Sacramento Levee Evaluation Project, Administrative Draft, Problem Identification Report*, HDR, Inc., prepared for the City of West Sacramento, January 2008
- *West Sacramento Levee Evaluation Program, Administrative Draft, Alternatives Analysis,* HDR, Inc., November 2009
- *Hydraulics Report for the City of West Sacramento* Levee Alternatives Analysis, MBK Engineers, March 28, 2007

- *Evaluating the Effects of the Sacramento River West Levee Setback at Oak Hall Bend,* MBK Engineers, April 18, 2007
- *Summary Report on Hydraulic Impacts of the West Sacramento Levee Improvement Project (Draft),* MBK Engineers, June 22, 2009
- *Hydraulic Impact Analysis of Cumulative Development in Sacramento River Corridor Floodway,* MBK Engineers, June 27, 2005
- *Report on Effects of Projected Sea-Level Change on West Sacramento Levee Improvement Project Design*, MBK Engineers, November 20, 2009

The following document is included as Appendix C of this document.

- *(Draft) Summary Report on Hydraulic Impacts of the West Sacramento Levee Improvement Project*, MBK Engineers, June 22, 2009

3.2.2 Affected Environment

3.2.2.1 Regulatory Setting

This section describes the Federal and state regulations, laws, and policies that pertain to hydrology, hydraulics, geomorphic conditions, and flood control issues within the proposed program area.

3.2.2.1.1 Federal

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were intended to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. FEMA administers the National Flood Insurance Program (NFIP) to subsidize flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues Flood Insurance Rate Maps (FIRMs) for communities participating in the NFIP. These maps delineate flood hazard zones in the community. These maps are designed for flood insurance purposes only and do not necessarily show all areas subject to flooding. The maps designate lands likely to be inundated during a 100-year storm event and elevations of the base flood. They also depict areas between the limits affected by 100-year and 500-year events and areas of minimal flooding. These maps often are used to establish building pad elevations to protect new development from flooding effects. The locations of FEMA-designated floodplains in the proposed program area are included in the Environmental Setting discussion below.

Requirements for Federal Emergency Management Agency Certification

For guidance on floodplain management and floodplain hazard identification, communities turn to FEMA guidelines, as defined in 44 CFR 59 through 77. In order for a levee to be recognized by FEMA under the NFIP, the community must provide evidence demonstrating that adequate design and operation and maintenance systems are in place to provide reasonable assurance that protection from the base flood (1% or 100-year flood) exists. These specific requirements are outlined in 44 CFR 65.10, Mapping of Areas Protected by Levee Systems, and are summarized below.

Levee height. Riverine levees must provide a minimum freeboard (the height of the top of a levee above a given level of water in a river) of 3 feet above the water-surface level of the base flood. An additional 1 foot above the minimum is required within 100 feet of either side of structures (such as bridges) riverward of the levee or wherever the flow is constricted. An additional 0.5 foot above the minimum at the upstream end of the levee, tapering to not less than the minimum at the downstream end of the levee, also is required.

Closures. All openings must be provided with closure devices that are structural parts of the system during operation and designed according to sound engineering practice.

Embankment protection. Engineering analyses must be submitted that demonstrate that no appreciable erosion of the levee embankment can be expected during the base flood, as a result of either currents or waves, and that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability.

Embankment and foundation stability. Engineering analyses that evaluate levee embankment stability must be submitted to FEMA. The analyses provided shall evaluate expected seepage during loading conditions associated with the base flood and shall demonstrate that seepage into or through the levee foundation and embankment will not jeopardize embankment or foundation stability.

Settlement. Engineering analyses must be submitted that assess the potential and magnitude of future losses of levee height as a result of levee settlement and demonstrate that freeboard will be maintained within the minimum standards.

Interior drainage. An analysis must be submitted that identifies the source(s) of such flooding, the extent of the flooded area, and, if the average depth is greater than 1 foot, the water-surface elevation(s) of the base flood.

Operation plans. For a levee system to be recognized, a formal plan of operation must be provided to FEMA. All closure devices or mechanical systems for internal drainage, whether manual or automatic, must be operated in accordance with an officially adopted operational manual, a copy of which must be provided to FEMA.

Maintenance plans. For levee systems to be recognized as providing protection from the base flood, they must be maintained in accordance with an officially adopted maintenance plan. All maintenance activities must be under the jurisdiction of a Federal or state agency, an agency created by Federal or state law, or an agency of a community participating in the NFIP that must assume ultimate responsibility for maintenance. The plan must document the formal procedure that ensures that the stability, height, and overall integrity of the levee and its associated structures and systems are maintained. At a minimum, maintenance plans must specify the maintenance activities to be performed, the frequency of their performance, and the person by name or title responsible for their performance.

U.S. Army Corps of Engineers Levee Design Criteria

A majority of the levees included in the proposed program area are federally authorized and fall within the jurisdiction of USACE. The levee evaluation for the proposed program area conforms to the engineering criteria established by USACE for the assessment and repair of levees. The USACE technical criteria in the following bullet list should be used as guidance unless noted otherwise.

- Overtopping of Flood Control Levees and Floodwalls (Publication ETL 1110-2-299, August 22, 1986)
- Structural Design of Closure Structures for Local Flood Protection Projects (Publication EM 1110-2-2705, March 31, 1994)
- Design of Coastal Revetments, Seawalls, and Bulkheads (Publication EM 1110-2-1614, June 30, 1995)
- Design Guidance on Levees (Publication ETL 1110-2-555, November 30, 1997)
- Conduits, Culverts, and Pipes (Publication EM 1110-2-2902, March 31, 1998)
- Guidelines on Ground Improvement for Structures and Facilities (Publication ETL 1110-1-185, February 1, 1999)
- Engineering and Design for Civil Works Projects (Publication ER 1110-2-1150, August 31, 1999)
- Design and Construction of Levees (Publication EM 1110-2-1913, April 30, 2000)
- Geotechnical Investigations (Publication EM 1110-1-1804, January 1, 2001)
- USACE CESPK Levee Task Force, Recommendations for Seepage Design Criteria, Evaluation and Design Practices (2003)
- Slope Stability (Publication EM 1110-2-1902, October 31, 2003)
- Geotechnical Levee Practice (Publication SOP EDG-03, June 28, 2004)
- Engineering and Design—Design Guidance for Levee Underseepage (Publication ETL 1110-2-569, May 1, 2005)
- Quality Management (Publication ER 1110-1-12, September 30, 2006)
- Engineering Technical Letter (ETL) 1110-2-571 Guidelines For Landscape Planting And Vegetation Management At Levees, Floodwalls, Embankment Dams, and Appurtenant Structures

Sacramento River Flood Control Project Levee Height Requirements for Proposed Program Area

As specified in the Design Memorandum, Volume I of II for the Sacramento River Flood Control Project, California, Mid-Valley Area, Phase III (U.S. Army Corps of Engineers 1996) and the Operation and Maintenance Manual for Channel and Levees, Sacramento River Deep Water Ship Channel Project (U.S. Army Corps of Engineers 1963), the following minimum levee height (freeboard) requirements apply to the various reaches[1].

- Sacramento River Levee: 3 feet
- Sacramento Bypass Levee: 6 feet
- Yolo Bypass Levee: 6 feet
- DWSC Levees, Port North Levee, and Port South Levee: 6 feet for the DWSC where it is adjacent to the Yolo Bypass and 3 feet for the Port (Turning Basin and Barge Canal).

[1] The freeboard requirements listed are for the Sacramento River Flood Control Project, specifically the 1957 profiles for Sacramento River, the Sacramento Bypass, and the Yolo Bypass, and the design elevations in referenced in U.S. Army Corps of Engineers (1963) for the DWSC, Port North, and Port South Levees.

Executive Order 11988 (Floodplain Management)

Executive Order 11988 addresses floodplain issues related to public safety, conservation, and economics. The order generally requires Federal agencies constructing, permitting, or funding actions meet the following requirements:

- avoid incompatible floodplain development,
- be consistent with the standards and criteria of the NFIP, and
- restore and preserve natural and beneficial floodplain values.

Section 401 of the Clean Water Act and State Regulations in Title 23 California Code of Regulations

This regulation establishes requirements for all dredging activities for navigable waters of the State of California.

Code of Federal Regulations, Title 40, Part 131, Water Quality Standards

This regulation establishes requirements for water quality, including activities related to in-channel construction, dredging, and long-term effects resulting in sediment transport and scouring.

Public Law 84-99 Delta Specific Standard

This Federal law specifies, among other findings, minimum standards to which the rehabilitation and construction of levees in the Delta should be constructed.

Section 408

This Federal law is covered in more detail in Chapter 1, Introduction, and Chapter 7, Compliance with Applicable Laws, Policies, Plans and Regulatory Framework.

3.2.2.1.2 State

Central Valley Flood Protection Board

The Central Valley Flood Protection Board (CVFPB) (formerly the California Reclamation Board) of the State of California regulates the modification and construction of levees and floodways in the Central Valley defined as part of the Sacramento Valley and San Joaquin Valley flood control projects. Rules promulgated in Title 23 of the California Code of Regulations (CCR) (Title 23, Division 1, Article 8 [Section 111 through 137]) regulate the modification and construction of levees to ensure public safety. The rules state that existing levees may not be excavated or left partially excavated during the flood season, which is generally November 1 through April 15 for the Sacramento River and Sacramento Bypass.

The following CVFPB guidance has been followed during the levee evaluation:

> The California Reclamation Board has primary jurisdiction approval of levee design and construction. The Reclamation Board standards are found in Title 23, Division 1, Article 8 (Sections 111 through 137) of the California Code of Regulations (CCR), and constitute the primary state standard. Section 120 of the CCR directs that levee design and construction be in accordance with the USACE's Engineer Manual EM 1110-2-1913, Design and Construction of Levees. This document is the primary

federal standard applicable to this project, as supplemented by additional prescriptive standards contained in Section 120 of the CCR. These additional standards prescribe minimum levee cross-sectional dimensions, construction material types, and compaction levels.

Delta Protection Act of 1992

This act declares that the basic goals of the state for the Delta are, among other findings, to improve flood protection, and therefore to ensure an increased level of public health and safety, by structural and non-structural means.

Safe, Clean, Reliable Water Supply Act

This act declares that the basic goals of the state for the Delta are, among other findings, to protect the integrity of the state's water supply system from catastrophic failure attributable to earthquakes and flooding.

3.2.2.1.3 Local

Yolo County

The Health and Safety Element of the Draft 2030 Countywide General Plan for Yolo County (Yolo County 2008) contains goals, policies, and actions aimed at reducing the risk of flooding within the county. Any violation of these goals, policies, and actions would constitute a significant effect.

Goals

GOAL HS-2: Flood Hazards. Protect the public and reduce damage to property from flood hazards.

Policies

Policy HS-2.2: Ensure and enhance the maintenance and integrity of flood control levees.

Policy HS-2.3: Actively update and maintain policies and programs to ensure consistency with state and Federal requirements.

Actions

Action HS-A4: Require a minimum of 100-year flood protection for new construction, and strive to achieve 200-year flood protection for unincorporated communities where such levels of protection are not provided, require new development to adhere to the requirements of state law and the County Flood Damage Prevention Ordinance.

Action HS-A13: Require a minimum 50-foot setback for all permanent improvements from the toe of any flood control levee.

Action HS-A15: Support the efforts of levee maintenance districts with efforts to secure state and federal funding for geotechnical studies of levees and implementation of associated improvements.

Action HS-A16: Encourage flood hazard reduction projects along the Sacramento River to be consistent with the guidelines of the Sacramento River Corridor Floodway Management Plan.

Action HS-A17: Coordinate with local, state, and federal agencies to define existing and potential flood problem areas, including the possible effects associated with global climate change, and to maintain and improve levees and other flood control features.

Action HS-A18: Develop a detailed maintenance and funding plan for levees under County control, to ensure that levee safety is maintained.

Action HS-A19: Support and encourage responsible agencies to site new levees or major rehabilitation of levees at a distance from the river and from existing levees, where feasible. This would provide a degree of redundancy in the system, increase the land available for habitat and flood storage, reduce operation and maintenance costs, and help to ensure the integrity of the structures.

Action HS-A21: Ensure that the upgrade, expansion, or construction of any flood control levee demonstrates that it will not significantly divert flood water or increase flooding.

Action HS-A23: Improve the county's classification within the Federal Emergency Management Agency Community Rating System.

Action HS-A28: Pursuant to Section 8201 of the State Water Code, develop local plans for flood protection, including analysis of financing options to construct and maintain any needed improvements, to address how 100-year floodplain protection for each community may be provided. Those communities that are economically disadvantaged shall have priority in developing flood protection plans. The cities shall be consulted in development of the plans, which shall be consistent with the Central Valley Flood Protection Plan.

Solano County

The Public Health and Safety Chapter of the Solano County General Plan (Solano County 2008) contains goals, policies, and implementation programs aimed at reducing the risk of flooding within the County. Any violation of these goals, policies, and implementation programs would constitute a significant effect.

Goals

HS.G-1: Minimize the potential for loss of life and property resulting from natural or human-caused hazards.

HS.G-5: Recognize the multiple functions of the natural environment for safety, recreation, protection from climate changes, and economic uses.

Policies

HS.P-2: Restore and maintain the natural functions of riparian corridors and water channels throughout the county to reduce flooding, convey stormwater flows, and improve water quality.

HS.P-6: Work with federal, state, and local agencies to improve flood control and drainage throughout the county.

HS.P-8: Work with responsible parties to ensure dams, levees, and canals throughout the county are properly maintained and/or improved.

HS.P-10: Ensure that flood management policies that minimize loss of life and property also balance with environmental health considerations of the floodplain and therefore do not cause further erosion, sedimentation, or water quality problems in the floodplain area.

Implementation Programs

HS.I-5: Require periodic stream maintenance by private property owners, and undertake regular stream maintenance by the appropriate public agencies.

HS.I-6: Continue to make regular flood control and drainage improvements as recommended by local agency plans, the U.S. Army Corps of Engineers, and the California Reclamation Board. These actions are independent of and in addition to the development review process.

HS.I-7: During project review, require the use of stormwater management techniques in developed upstream watershed areas that protect low-lying areas from flooding. Incorporate appropriate measures into the development review process to mitigate flooding and prevent erosion in and around county ditches.

HS.I-10: During project review, encourage the use of landscaping practices and plants that will reduce demand on water, retain runoff, decrease flooding, and recharge groundwater.

HS.I-13: Work with the Solano County Water Agency to create a countywide comprehensive flood management plan.

HS.I-15: Work with the Solano County Water Agency (or successor agency) in preparing a hydrological analysis of uplands, identifying the different watersheds that drain into the county, establishing flood-related objectives and priorities on a study area basis, and translating those into a coordinated series of flood-preventive measures for each watershed.

City of West Sacramento

The Central Valley Flood Protection Plan (CVFPP) requires 200-year flood protection by the year 2025. The time and effort required to fully evaluate approximately 50 miles of levees, and develop recommended strategies for improvement, and implement those improvements prompted action without further delay. In addition, within its General Plan, the City adopted a goal of achieving 200-year flood protection.

The Health and Safety Section of the City of West Sacramento General Plan, Policy Document (City of West Sacramento 1990) contains goals and policies aimed at reducing the risk of flooding within the county. Any violation of these goals and policies would constitute a significant effect.

Goals

Goal B: To prevent loss of life, injury, and property damage due to flooding.

Policies

Policy 1: The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall ensure that local regulations are in full compliance with standards adopted by the Federal Emergency Management Agency.

Policy 6: Construction of storm drainage improvements shall be required, as appropriate, to prevent flooding during periods of heavy rainfall.

Policy 8: The City shall cooperate with area reclamation districts and other responsible agencies in the maintenance and improvement of levees and drainage channels.

Policy 9: The City shall support state and federal legislation which provides funding for the construction of flood control improvements in urbanized areas.

Policy 10: The City shall discourage uses that promote the erosion or structural deterioration of levees.

West Sacramento Area Flood Control Agency

WSAFCA is proposing the WSLIP to improve the levees in Yolo and Solano Counties that protect the city of West Sacramento. WSAFCA is a Joint Powers Authority created in 1994 through a Joint Exercise of Powers Agreement by the City, Reclamation District (RD) 900, and RD 537. WSAFCA was established to coordinate the planning and construction of flood protection facilities and to finance the local share of flood control projects. WSAFCA is responsible for the operations and maintenance of the detention basins, pump stations, and levees that protect the city.

WSAFCA Freeboard Requirements for Proposed Program Area

WSAFCA has no minimum freeboard requirements. Because USACE is the NEPA lead agency for the WSLIP, and the overall intention of the WSLIP is to provide protection for the 200-year flood event, WSAFCA uses the minimum freeboard requirements set forth by USACE.

3.2.2.2 Environmental Setting

3.2.2.2.1 Flood Control

Sacramento River Flood Control Project

The Sacramento River Flood Control Project (Flood Control Project) was authorized by Congress in 1917. The Flood Control Project was the major project for flood control on the Sacramento River and its tributaries. It was sponsored by The Reclamation Board of the State of California (today reauthorized as the CVFPB) and was the first Federal flood control project constructed outside the Mississippi River Valley (U.S. Army Corps of Engineers 2009a).

The Flood Control Project includes approximately 980 miles of levees, overflow weirs, pumping plants, and bypass channels. Currently, the Flood Control Project extends from the Sacramento River's mouth near Collinsville in the Delta to near Chico Landing in the northern Sacramento Valley. Approximately 980 miles of levees were constructed as part of the project, providing flood protection to roughly 800,000 acres of highly productive agricultural lands, the cities of Sacramento and Marysville, and numerous other small communities. Although the Flood Control Project levees often were constructed of poor foundation materials such as river dredge spoils that would not meet current engineering standards, the levees are relied upon to provide flood protection during major storms to more than 2 million people in approximately 50 communities with an estimated $37 billion in urban and agricultural development.

For more information about the Flood Control Project and related programs and actions, refer to Chapter 1, Introduction.

3.2.2.2.2 Climate

West Sacramento has a mild, Mediterranean-type climate. Mean annual temperature is a relatively mild 62.2°F. Maximum average annual temperatures during the summer range from 87.1°F to 93.1°F. Temperatures sometimes exceed 100°F. Winter temperature maximums vary from 54.5°F to 60.6°F. Average low temperatures in the winter range from 40.2°F to 43.7°F. Temperatures in the winter only occasionally drop below freezing. (Andrews 1972.)

Average annual precipitation is about 18 inches, with approximately 80% of the total rainfall occurring between November and March. Cloud-free skies generally prevail throughout the summer months, and in much of the spring and fall. Thunderstorms are relatively infrequent, although occasionally occur in the late summer and other times of the year when unstable air masses are situated over the region. The highest rainfall generally occurs in January, when the average is about 4.2 inches of precipitation. The driest month is July, during which rainfall is rare.

The temporal variability in precipitation is related to seasonal variation in atmospheric conditions. During the summer months, high pressure systems build over the Pacific Ocean off the California coast, promoting the transport of cool, dry air from the north. This effectively blocks major sources of moisture. During the winter rainy season, the jet stream migrates farther south, allowing low pressure systems off the California coast to create conditions that transport moisture inland. Extreme variability of rainfall averages is indicative of wet and dry cycles. During Water Years 1986, 1993, 1995, 1996, and 2005, total rainfall was significantly higher than normal, with annual precipitation measured at 30.15, 29.41, 24.79, 23.74, and 19.95 inches, respectively[2] (California Department of Water Resources, Office of Water Use Efficiency, California Irrigation Management System 2009). Recent dry periods include the 1976–77 and 1987–1992 drought years, with precipitation far below average because of the prevalence of stable, high pressure systems during those winter months.

3.2.2.2.3 Hydrology and Hydraulics

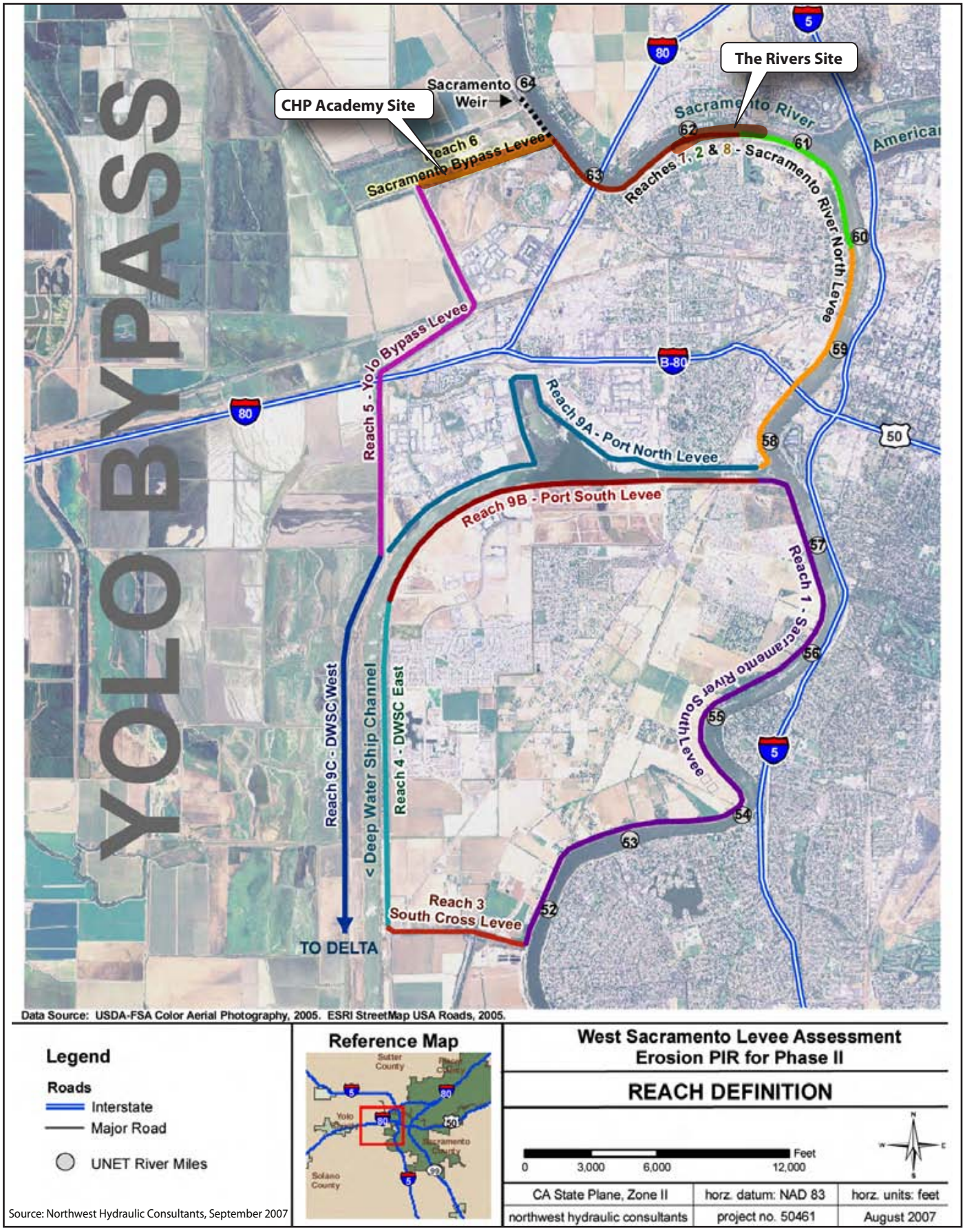
Naming Conventions

Two naming conventions have been adopted for the West Sacramento Levee system. Initially, the system was divided into 11 numbered reaches (Reaches 1–9), including 9A, 9B, and 9C, around the Port of Sacramento and the DWSC. The numbers subsequently were replaced with names, and some reaches were combined, resulting in nine named reaches (Figure 3.2-1). Northwest Hydraulic Consultants (NHC) further combined the levee reaches surrounding West Sacramento into three broad groups for their erosion assessment (Northwest Hydraulic Consultants 2007a). The Affected Environment section of this chapter uses these three broad groups for descriptive purposes.

The first group is reaches 1, 2, 7, and 8 along the Sacramento River, extending from the southern boundary of West Sacramento upstream to the Sacramento Weir. These are further described below:

- Sacramento River South Levee (Reach 1): 6.4 miles of the right (west) levee along the Sacramento River from the South Cross Levee upstream to the Barge Canal, and

[2] Measurement recorded at Station # 6 in Davis, CA (38°32'09"N / 121°46'32"W).



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Figure 3.2-1
Reach Definition

- Sacramento River North Levee (Reaches 8, 2, and 7): 6.0 miles of the right (west) levee of the Sacramento River from the left (north) bank of the Barge Canal upstream to the left (south) levee of the Sacramento Bypass (Reach 6).

The second group is reaches 5, 6, and 9c along the Sacramento Bypass South Levee and the levees along the east side of the Yolo Bypass. These are further described below:

- Sacramento Bypass Levee (Reach 6): 1.2 miles of the left (south) levee of the Sacramento Bypass from the Sacramento River to the left (east) levee of the Yolo Bypass,
- Yolo Bypass Levee (Reach 5): 3.8 miles of the left (east) project levee of the Yolo Bypass from the left (south) levee of the Sacramento Bypass to the DWSC West Levee, and
- DWSC West Levee (Reach 9C): Approximately 21.5 miles of the navigation levee between the Yolo Bypass and the DWSC that controls flood levels in the Port of Sacramento. Both the west and east sides of the DWSC levee are discussed as part of this group.

The third group is reaches 3, 4, 9A, and 9B along the DWSC, the levees around the Port of Sacramento, and the remaining reaches on Figure 3.2-1, as described below:

- DWSC East Levee (Reach 4): 2.8 miles of the left (east) levee of the DWSC levee extending south of the Port of Sacramento,
- Port North Levee (Reach 9A): 4.96 miles of the north bank of the Port of Sacramento between the left (east) levee of the Yolo Bypass and the locks on the DWSC,
- Port South Levee (Reach 9B): 3.38 miles of the south bank of the Port of Sacramento between the left (east) levee of the DWSC and the locks on the DWSC, and
- South Cross Levee (Reach 3): This levee extends along the southern boundary of West Sacramento, joining Reach 1 and Reach 4. This levee is not regularly exposed to flow and was not included in NHC's erosion evaluation (Northwest Hydraulic Consultants 2007a).

Levee Stationing

Levee stationing is unique to each reach and was provided by HDR, Inc. Where appropriate, the particular baselines and 0+00 stations are shown on figures or described in the various reports. See Figures 3.2-2 and 3.2-3 (HDR, Inc. 2008a) for levee reach stationing.

Regional Hydrology

Rivers flowing into the north Delta convey approximately 50% of the state's annual runoff (California Department of Water Resources 1995). The main river systems are the Sacramento, San Joaquin, Mokelumne, Cosumnes, and Calaveras. All the major rivers are regulated by dams, except for the Cosumnes River. The Sacramento River is the dominant source of fresh water and sediment to the north Delta, accounting for approximately 80% of annual freshwater inflows (Anderson 1994). The San Joaquin River is the second largest contributor, accounting for about 10% of annual freshwater inflows. Delta flows not diverted to agricultural and municipal intakes continue through the Carquinez Strait into the San Francisco Bay Estuary, and eventually through the Golden Gate into the Pacific Ocean.

Principal reservoirs controlling flows in the lower Sacramento River include Shasta Reservoir (4.55 million acre-feet [af]) on the Sacramento River upstream of Redding and Trinity Reservoir (2.48 million af), which regulates deliveries made to the Sacramento River from the Trinity River

basin. Diversions from the Trinity River basin into the Sacramento River basin averaged 1.03 million af annually from 1967 to 1991. The Feather River is a major tributary to the Sacramento River, and Oroville Reservoir is a component of the State Water Project (SWP) system that provides 3.54 million af of storage. Average runoff from the Feather River basin (including the Yuba River) is approximately 5.85 million af at the Nicholas gaging station (downstream of the confluence with the Yuba River).

The Sacramento River drainage basin upstream of the American River confluence encompasses approximately 23,500 square miles. The monthly minimum, average, and maximum mean daily flows on the Sacramento River near Verona (upstream of the American River) and at Freeport (downstream of the American River) are presented in Table 3.2-1. The proposed program area extends down past the American River watershed. The Sacramento River at Freeport gage more closely reflects the actual project flow around the southern end of the proposed program area.

Table 3.2-1. Monthly Mean Daily Flow Statistics for Sacramento River at Verona and Sacramento River at Freeport for 1990 through 2008

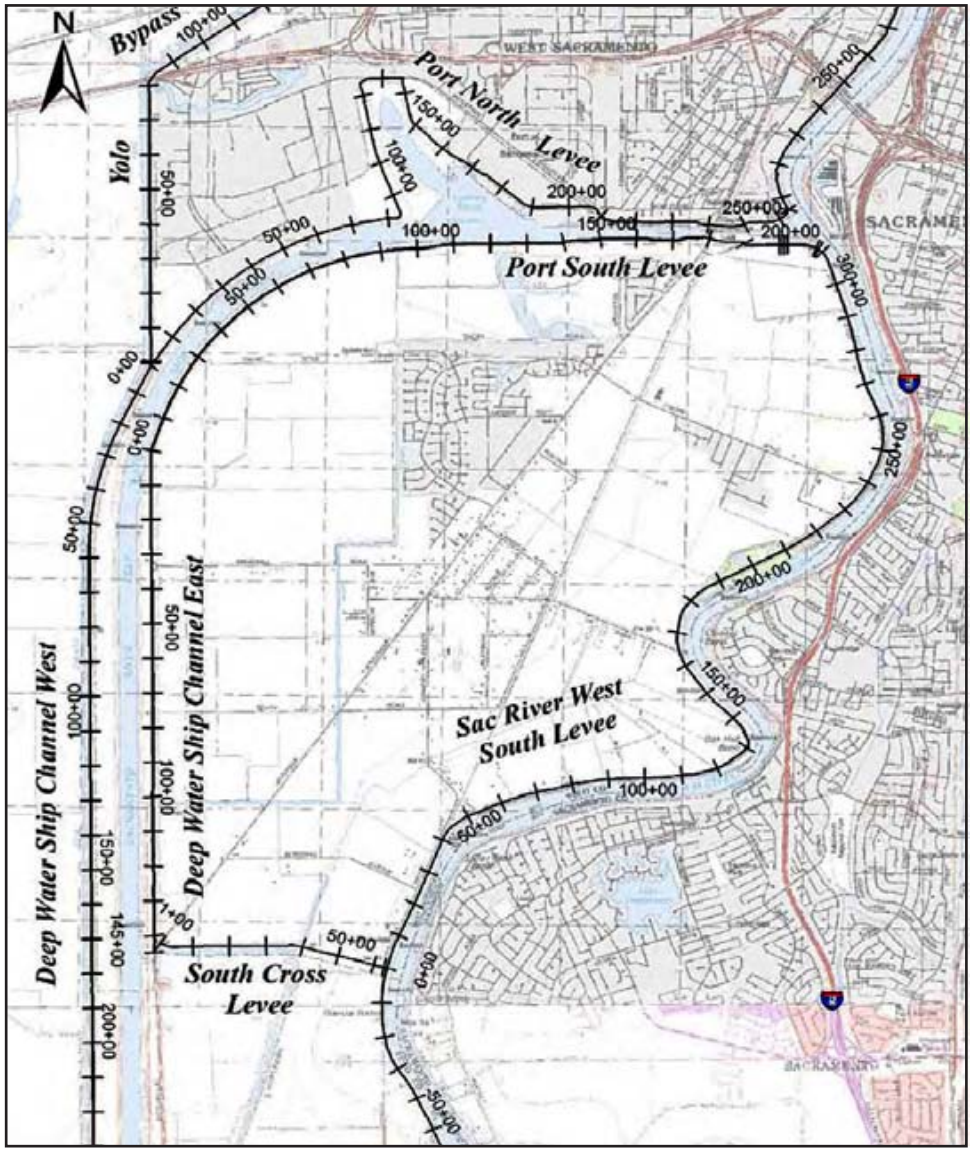
	Sacramento River at Verona Station 11425500			Sacramento River at Freeport Station 11447650		
	Minimum	Average	Maximum	Minimum	Average	Maximum
January	6,460	29,888	95,600	6,560	34,311	113,000
February	6,200	34,008	76,300	6,030	39,647	94,100
March	7,730	31,811	80,700	8,300	36,793	99,500
April	3,920	22,552	73,600	4,340	26,786	91,800
May	3,870	19,199	69,600	4,640	23,511	88,600
June	3,590	16,028	60,500	6,120	19,810	70,500
July	3,830	15,051	28,400	7,030	18,434	44,500
August	4,890	14,582	22,800	7,230	16,669	26,400
September	7,350	13,525	24,700	8,150	15,188	28,600
October	4,820	9,449	18,900	5,100	11,065	23,600
November	5,230	10,239	30,700	5,530	11,912	34,800
December	5,600	19,452	73,700	6,250	22,289	96,400

Source: U.S. Geological Survey 2009. Available: <http://waterdata.usgs.gov/nwis/sw>.
Notes: Flow in cubic feet per second from January 1, 1990 to February 8, 2009.

All hydrologic information described below for the three groups of levees under investigation is derived and summarized from NHC (2007a).

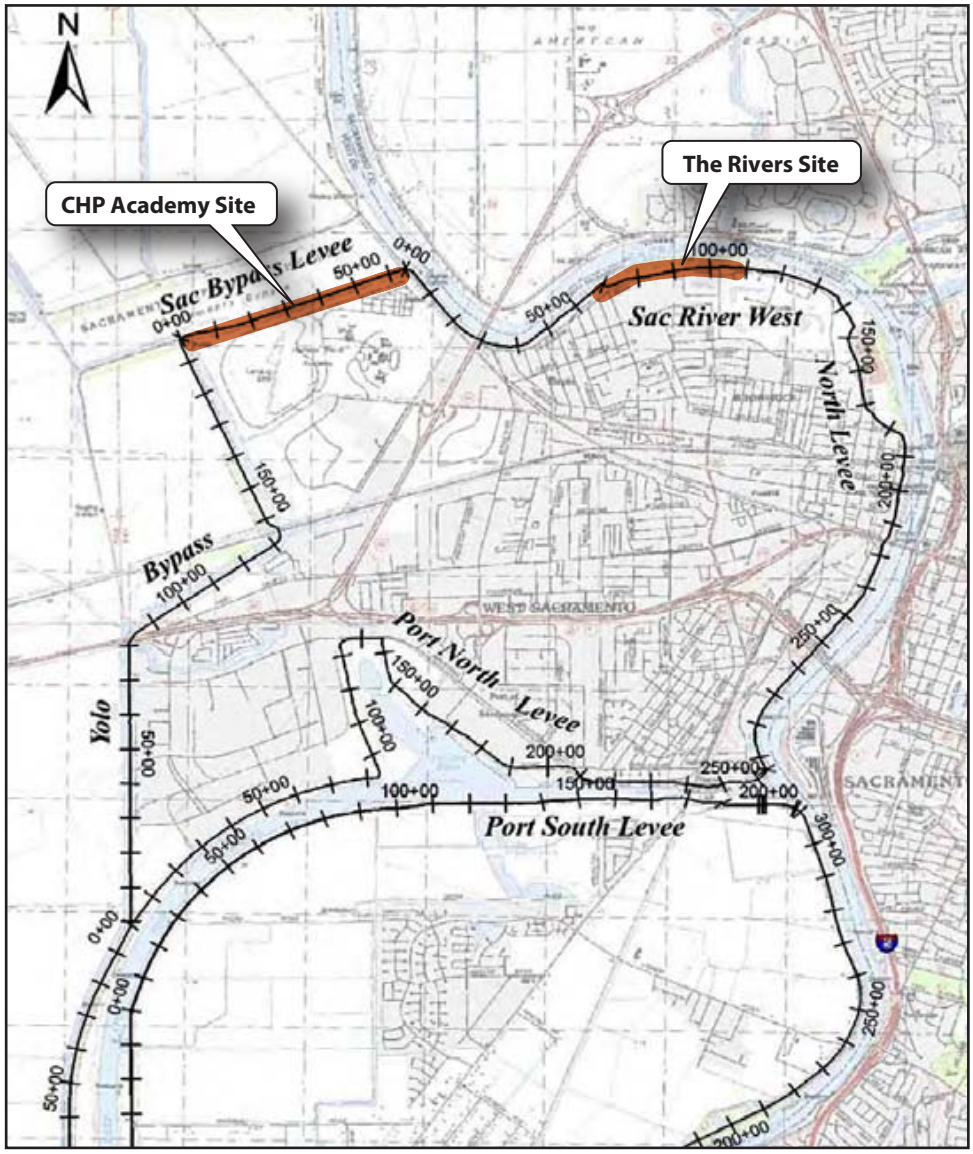
Sacramento River Sites (Sacramento River North and South Levees—Reaches 1, 2, 7, and 8)

Daily streamflows have been recorded at the Sacramento River at Verona gage (gage 11425500) by the U.S. Geological Survey (USGS) since 1929. The gage is upstream of the proposed program area, at approximately RM 78.6. The Sacramento River at Sacramento (I Street) gage (gage 11447500) was operated by USGS from 1948 to 1979; it is now operated by DWR. The gage is located about 1,000 feet upstream of the I Street Bridge and about 0.5 mile downstream of the American River confluence at RM 59.5 in Reach 8. The Freeport gage (gage 11447650) is downstream of the



Source: HDR, Inc., January 2008

Figure 3.2-2
West Sacramento Southern Basin - Levee Reach Stationing



Source: HDR, Inc., January 2008

Figure 3.2-3
West Sacramento Northern Basin - Levee Reach Stationing

proposed program area, at about RM 46. NHC (2007b) provides a detailed analysis of daily, seasonal, and peak flows at the I Street and Freeport gages.

Projected peak flows in the Sacramento and American Rivers were provided by MBK Engineers (2008a) based on the Sacramento and San Joaquin River basins California Comprehensive Study (Comprehensive Study) Sacramento River UNET model. In Table 3.2-2, the 100-year projected peak flow is based on a 145,000 American River peak flow and upstream Sacramento River levees overtopping without failing; the 200-year peak is based on 160,000 cubic feet per second (cfs) American River peak flow and the same levees overtopping without failing. See section on Flooding below for longitudinal profile information with resulting maximum water surface elevation profiles (for the 1/100 and 1/200 Annual Exceedance Probabilities [AEPs]), the approximate tops of the levees, and the original 1957 Flood Control Project design floodplain for the Sacramento River, Sacramento Bypass, Yolo Bypass, and DWSC.

Table 3.2-2. Projected Peak Flows for Sacramento River Sites

	Projected Peak Flow (cfs)	
Location	100-year[1]	200-year[2]
Sacramento River at Verona Gage	117,500	142,600
Sacramento River at I Street	135,600	143,300
Sacramento River at Freeport Gage	135,200	143,000
American River at H Street	145,000	160,000

Source: MBK Sacramento River UNET hydraulic model June 2008 simulations documented in *Supplemental Report for the City of West Sacramento Levee Alternatives Hydraulic Analysis - Draft*, August 6, 2008.

[1] Assumes levees overtop without failing; existing conditions and operations.

[2] Assumes levees overtop without failing; urban levees have three feet of freeboard on 1/200 AEP water surface; non-urban levees satisfy SRFCP design freeboard requirements; Folsom Dam Joint Federal Project in place.

Yolo and Sacramento Bypass Reaches (Yolo Bypass Levee, Sacramento Bypass Levee, and Deep Water Ship Channel West Levee—Reaches 5, 6, and 9C)

Flows in the Yolo Bypass come from several different sources. Floodflows from Sutter Bypass and the Sacramento River enter the Yolo Bypass over the Fremont Weir when the stage in the Sacramento River reaches 32.27 feet in the North American Vertical Datum of 1988 (NAVD 88).

Water also enters the Yolo Bypass from the west side tributaries—Knights Landing Ridge Cut, Cache Creek (Cobble Weir), Willow Slough Bypass, and Putah Creek—and from the Sacramento Weir. The gates of the Sacramento Weir are opened when stages exceed 30.07 feet (NAVD 88) at the I Street Bridge: the weir operates infrequently. Various documents describe the relative importance of these sources of floodflows (Yolo Bypass Working Group 2001; Natural Heritage Institute 2003).

DWR has maintained a gage at Lisbon Weir, along the Yolo Bypass Levee, since 1935. Water levels at this gage are tidally influenced and fluctuate between 3 and 7 feet stage (USACE datum) or between 3.07 and 7.07feet NAVD88, at low water. Flood stage at the gage is 11.5 feet (11.57 feet NAVD 88); above this elevation water is no longer contained in the Toe Drain and the Yolo Bypass starts to inundate. The Yolo Bypass floods about 3 out of 5 years, on average, and the annual duration of flooding ranges from zero to 135 days.

The maximum stage recorded at the Lisbon Weir was 27.47 feet NAVD 88 in February 1986. The maximum stage in January 1997, 24.6 feet, was slightly lower than in 1986, but the maxima in these two years are several feet higher than in the other years of record (Jones & Stokes 2006). Water surface elevations in these years were only 2 to 3 feet below the top of the Yolo Bypass levee (U.S. Army Corps of Engineers 2006). Since 1997, USACE has raised levee elevations along the upper portion of the Yolo Bypass Reach and in the Sacramento Bypass by up to 5 feet.

Based on the DWSC West Levee sections in Appendix D of NHC (2007a), a typical elevation for the berm on the Yolo Bypass side of the levee near the Lisbon gage is 17.57 to 22.57 feet NAVD 88. Based on the mean daily water surface elevation duration curve for Lisbon gage in NHC (2007a), stage exceeds this elevation only 2 or 3% of the time, indicating that high water levels that result in wave attack on the levee occur only infrequently.

MBK Engineers provided average cross-sectional velocities in the Yolo Bypass from their UNET model. These velocities varied from 2 to 4 feet/second despite the large cross-sectional area in the bypass. Velocity data at the Lisbon Gage, which is close to the levee, show maximum velocities of about 2.5 feet/second. Velocities vary considerably across the sections and may be higher where flows accelerate around obstacles, around bends, or where the section narrows. (Northwest Hydraulic Consultants 2007a.)

Port of Sacramento and Deep Water Ship Channel East Levees (South Cross Levee, Deep Water Ship Channel East Levee, Port North Levee, and Port South Levee—Reaches 3, 4, 9A, and 9B)

Detailed hydrology and hydraulics information for these reaches is not included in this EIR/EIS. The DWSC and Port levees are essentially backwater channels in which the water surface elevation is controlled/equal to the water surface elevation where the DWSC connects to Cache Slough. A discussion of flooding characteristics for these reaches is provided below in the Flooding section.

3.2.2.2.4 Geomorphic Conditions

The present geomorphic state of the lower Sacramento River basin and the north Delta is a function of the intensity of water management in each of the tributary rivers, local farming practices, intra- and inter-Delta water transfers, and an extensive human-made levee system. Today, channel alignments are largely fixed by artificial levees and erosion control measures. Flooding, except when artificial levees break, no longer occurs on most islands and tracts. Instead, flow and sediment remain confined to the existing channel network. Upstream water diversions for municipalities and agriculture reduce the amount of flow entering the Delta and the amount of sediment transported to the Delta. In addition, conveyance of water within and out of the Delta alters flow directions and affects sedimentation and erosion rates and patterns. The levee system in the Delta restricts flow to a network of human-made and natural channels that reduce flood events and inhibit the accumulation of soils on the Delta islands.

Historic changes in the lower Sacramento River basin and north Delta that have affected channel morphology include land reclamation, levee construction, dredging, hydraulic mining, impoundment of water and sediment by upstream dams and other diversions, and the construction of water diversion facilities and consequent alteration of flow and sedimentation patterns in the Delta. The effects of these changes on channel morphology in the proposed program area are summarized below.

- Waterways in the proposed program area are largely confined by levees and able to convey significantly greater flow and sediment discharges than during historic times.
- Historic cross section data indicate that the majority of waterways in the proposed program area have experienced some channel incision over the several decades and may be experiencing a net sediment loss over time.
- Water regulation, diversions, and the impoundment of water and sediment by dams has resulted in a decline in the total annual water and sediment outflows to the Delta from the Central Valley, a trend that is expected to continue into the future (Northwest Hydraulic Consultants 2003).
- The construction of large water diversion facilities such as the Delta-Mendota Canal and Delta Cross Channel in 1951 and California Aqueduct in 1973 have altered the traditional flow patterns in the Delta that affect sedimentation. Water and sediment exhibit a more southerly flow in the Delta, somewhat reducing deposition of sediment in the north and central Delta and increasing deposition of sediment in the south Delta (Northwest Hydraulic Consultants 2003).
- The combination of overgrazing, deforestation, floodplain reclamation, river channelization, and most importantly, hydraulic mining for gold caused large increases in sediment loads in the Delta system. The historic trend demonstrates a rapid decline of sediment loads in the Delta streams at the beginning of the twentieth century, followed by a gradual, steady increase of sediment loads over the last half century (Northwest Hydraulic Consultants 2003).
- Historically, some deposition of the solids occurred at locations in the Delta channels where water velocities were low. During high-flow periods, a high percentage of these solids were re-suspended and moved downstream toward San Francisco Bay.

For a complete review of the historic geomorphology of the Delta region, refer to NHC's 2006 *North Delta Sedimentation Study.*

Sediment Inputs to the Delta

Most of the sediment supplied to the Delta (between 80% and 85% in an average year) is carried by the Sacramento River, whereas the San Joaquin River and the Mokelumne-Cosumnes River supply only about 10% and 4%, respectively (Northwest Hydraulic Consultants 2003). The remaining sediment enters the system from the Yolo Bypass and from several other smaller tributaries and sloughs. The Sacramento River is a sand-bed river; sediments transported through the action area include sands, silts, and clays.

The Flood Control Project conveys released reservoir waters from various upstream sources and stormwater runoff through the Delta and into San Francisco Bay. These waters contain dissolved and undissolved solids, both of which are transported through the system. Undissolved solids—sediment—consist primarily of clay-, silt-, and sand-sized particles. Before construction of the flood control and conveyance system, the natural flow of freshwater runoff from the upstream mountainous regions transported significant quantities of silt and clay particles. Because of the wide expanse and flat terrain of the proposed program area, these particles would settle and form the sediments of the northern Delta alluvial plain. During the wet season, when the volume of runoff water was much larger, the quantity of suspended and unsuspended solids was significant and included sands and, in some cases, gravels.

The natural processes described above continue today but in a modified manner. Much of the naturally eroded and transported solid particles now settle out in instream water storage reservoirs.

A percentage of the fine solids, like silts and clays, still are transported during water releases that enter the system from waterways downstream of the reservoirs. These sediments enter the Delta channels, and rather than settling out in the alluvial plain (as occurred before the channels were constructed), they now remain within the leveed channels.

For a description of total suspended sediment and turbidity see Section 3.3, Water Quality and Groundwater Resources.

Geomorphic Characteristics of the Study Area

Because of the low topographic position and proximity to the confluence of the Sacramento and American Rivers, the proposed program area has been subjected to repeated inundation by floodwaters during late Holocene time, and consequently is underlain by relatively thick alluvial deposits. The surface and subsurface distributions of sandy and clayey deposits are a function of former river alignments on the landscape, and present-day geomorphic processes adjacent to the river channels (i.e., flooding and deposition). In brief, the primary geomorphic features and associated surficial geological map units in the proposed program area include abandoned paleochannels, meander scroll deposits, crevasse splay and overbank flood deposits, flood basin deposits, and other features commonly associated with large, active river systems. (William Lettis & Associates 2007.)

The current geomorphology of the proposed program area is characteristic of Delta waterways. All waterways are bordered by levees. Channel alignments are preserved by ongoing levee maintenance and instream dredging. The Sacramento River in the vicinity of the proposed program area is characterized by a low gradient and typical low-velocity flow and is composed almost entirely of deep flatwater with a sand bed. River stage is controlled by dam and weir release upstream and is subject to diurnal tidal fluctuation. Very little sediment is stored in bars, and the bank-building process typical of lowland alluvial rivers no longer occurs. The channel width varies in the proposed program area but averages approximately 750 feet.

All geomorphic information described below (descriptions of hydraulic geometry, levee and bank geometry, and channel morphology) for the three groups of levees under investigation is derived and summarized from NHC (2007a). The overall goals of the NHC (2007a) report were to (1) identify those sites in the proposed program area where erosion occurs and without intervention may significantly compromise the flood performance and integrity of the levee system, (2) assess the risk of erosion at these sites and determine whether repairs are required for FEMA certification, and (3) provide feasibility or concept level erosion protection alternatives for those sites where protection is required for certification.

Sacramento River Sites (Sacramento River North and South Levees—Reaches 1, 2, 7, and 8 of the West Sacramento Levee System)

Hydraulic Geometry

The hydraulic geometry or hydraulic properties of the West Sacramento reach of the Sacramento River are based on analysis of cross sections on 0.25-mile spacing along the Sacramento River South Levee, as obtained from MBK's UNET model. The hydraulic geometry is based on a bankfull geometry interpreted from the cross sections and the 200-year projected peak flow geometry, calculated from the water surface elevations reported by the UNET model. This information is described in further detail in NHC's internal report *West Sacramento Erosion Site, Design Scour*

Levels for Erosion Protection (Northwest Hydraulic Consultants 2007c). Table 3.2-3 shows the geometry at the erosion sites for the 100- and 200-year AEP water levels, as interpreted from the nearest cross section. The geometric properties of the Sacramento River through West Sacramento are as follows:

- Average surface width at natural bankfull conditions — 570 feet
- Average bed width, excluding one triangular section — 340 feet
- Average bankfull depth, averaged over 19 sections — 39 feet
- Average bankfull cross-sectional area — 17,400 square feet
- Range of maximum depths below 200-year water level — 49 to 92 feet

Table 3.2-3. Hydraulic Geometry at the Erosion Sites

			100 Year				200 Year			
Site	River Mile (UNET)	Nearest Model Cross Section	Velocity (fps)	WSEL (Feet, NAVD 88)	Top Width[3] (Feet)	Area[3] (Feet^2)	Velocity (fps)	WSEL (Feet, NAVD 88)	Top Width[3] (Feet)	Area[3] (Feet^2)
1A	57.55[1]	57.25	5.2	33.97	697	25,859	5.3	35.17	701	26,666
1B	57.42[1]	57.00	5.0	33.87	726	26,603	5.2	35.07	731	27,443
1C	57.08[1]	57.00	5.0	33.87	726	26,603	5.2	35.07	731	27,443
1D	56.98[1]	56.75	4.9	33.77	810	27,358	5.0	34.97	815	28,296
1E	56.9[1]	56.50	5.1	33.67	667	26,082	5.3	34.77	672	26,855
1F	56.75[1]	56.50	5.2	33.67	667	26,082	5.3	34.77	672	26,855
1G	56.1[1]	55.75	4.5	33.37	857	29,856	4.6	34.57	863	30,847
1H	55.5[1]	55.00	4.1	33.07	857	32,870	4.2	34.27	863	33,866
1I	54.8[1]	54.25	4.8	32.67	1,244	28,342	4.2	33.87	1,262	29,342
1J	54.0[1]	53.50	6.1	31.97	588	21,933	6.2	33.07	594	22,673
8K	60.0[2]	60.0	4.9	35.17	1166	28,877	5.1	36.37	1218	27,745
8L	59.9[2]	60.0	4.9	35.17	1166	28,877	5.1	36.37	1218	27,745
8M	59.7[2]	60.0	4.9	35.17	1166	28,877	5.1	36.37	1218	27,745

Source: Northwest Hydraulic Consultants 2007a

Note: In the study area, NAVD 88 can be converted to NGVD 29 by subtracting 2.57 feet.

[1] River Mile to middle of site.

[2] River Mile to upstream end of site.

[3] Interpolated from nearest cross section.

The 200-year discharge at I Street is 143,300 cfs (Table 3.2-2). At the Freeport gage about 10 miles downstream, the maximum recorded discharge over the past 50 years was just less than 120,000 cfs, in 1986. The computed 200-year water surface slope for the West Sacramento Reach is approximately 0.53 ft/mile (0.10 meters/kilometer [m/km]).

Assuming a Manning roughness n-value of 0.030, the cross-sectional average velocity under bankfull conditions is estimate at about 4.6 feet per second (ft/s), resulting in an estimated bankfull discharge of about 80,000 cfs. Based on the cross sections provided by MBK Engineers, during the 200-year flood the average channel velocity in the West Sacramento Reach is about 5.1 ft/s (Table 3.2-3), and the average cross-sectional area is about 25,500 square feet (ft^2), giving a

calculated discharge of about 138,000 cfs, essentially equal to the value of 143,300 cfs provided in Table 3.2-2.

The section-averaged velocities during the 200-year projected peak flow do not present a significant concern for surface erosion by flows parallel to the bank, except where the banks have no vegetation and no other bank protection or where significant obstructions project into the flow and generate eddies and complex flows capable of eroding the stream bank. In most cases velocities along the bank will be lower than the section averages but may be near the average or slightly above along the outside (concave) bank of tight bends.

Levee and Bank Geometry

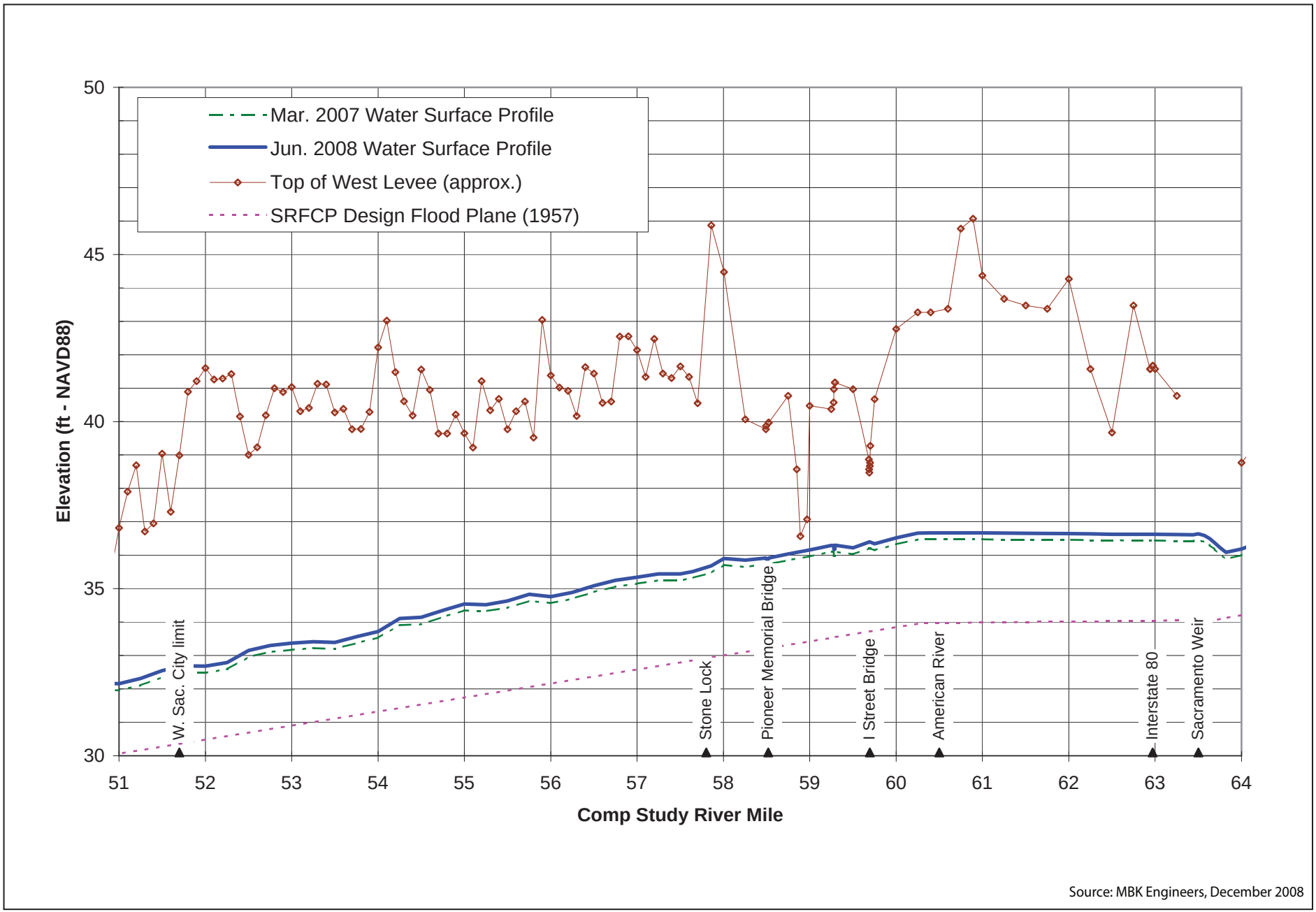
West Levee of the Sacramento River

The earliest maps along the Sacramento River, from 1908, show a levee on about the same alignment as at present, along the top of the west bank of the Sacramento River. This levee has been raised, widened, upgraded, and set back at some sites over the years. The Sacramento River South Levee crest is now between 17 and 23 feet high above the landside toe, with crown elevations between 34 and 40 feet. South River Road lies along most of the levee crest, and crest widths are usually just larger than the minimum of 20 feet. Kleinfelder (2007) discusses the stability berms, drains, and other remediation measures constructed along this leveed reach.

Kleinfelder (2007) also describes the levee soils and underlying foundation materials based on borings. The levee soils are typically silty sand and poorly graded clean sand. Beneath the levee materials, the typical profile consisted of a layer of fine-grained silt or clay (interpreted to be overbank deposits) underlain by up to 100 feet of sand and gravel, with interbedded silty sand and clayey sand layers. The main exception to the above typical profile is near the downstream end of the South Levee reach, where the levee is on an old railway grade. Drilling here showed a blanket of silt and clay extending at least 20 feet below the levee materials underlain by sand and/or gravel. These were interpreted to be floodbasin deposits, which appear to extend into the stream bank, overlying alluvium. The bottom of the flood basin deposits is at or above the thalweg elevation of the Sacramento River. The presence of these less-erodible deposits is thought to explain the straight, stable bank and narrow river section through the Clay Bend just near the downstream end of the South Levee reach.

Crest elevations along the Sacramento River North Levee (Reaches 8, 2, and 7) range from 36.57 to 46.57 feet NAVD 88 (Figure 3.2-4). Reach 8, the most downstream section of the North Levee, includes high ground that extends from the Barge Canal upstream to the Tower Bridge. The high ground is as high, or higher, than adjacent levee crests and extends at least 300 feet landward (Jones & Stokes 2006). The high ground appears to be stable and generally consists of river dredge spoils placed more than 75 years ago. Bank erosion was observed along this part of Reach 8, but it is not a concern for levee failure as the high ground functions as a very wide levee. From the Tower Bridge toward the I Street Bridge, the levee has been set back and protected as part of the River Walk project. However, the upstream 2,000 feet of Reach 8—near the I Street Bridge—has a minimum crest width and sparse bank protection and is close to the river. The erosion sites in Reach 8 are in this section of the Sacramento River North Levee.

In the middle of the Sacramento River North Levee (Reach 2), bank erosion was observed primarily where the levee crest appears to be extremely wide or where there is a substantial berm to protect the levee. From the upstream end of Reach 2, downstream for about 4,000 feet, revetment of varying



Source: MBK Engineers, December 2008

00875.07 EIS/EIR (03-10) AB

Figure 3.2-4
Maximum Water Surface Elevation, Sacramento River

size and age has been placed on the bank and levee. This revetment is often extremely steep and does not appear to meet current sizing criteria. For the next 4,000 feet, Reach 2 has some erosion protection. The patches of existing revetment do not appear to be engineered; however, the materials on the bank are often reasonably large and the revetment appears to provide adequate protection against erosion.

The upstream end of the Sacramento River North Levee (Reach 7) includes both riprap-protected banks and wide levee crests. Downstream from the Sacramento Weir for about 7,000 feet, streambanks are generally steep; however, most are either adequately protected with riprap or the levee crest is wide. (This section includes USACE Emergency Levee Repair project at site 62.5R). At the downstream end of Reach 7, and extending for about 3,000 feet, a private contractor designed and built bank protection in the summer of 2006.

Waterside Slope Levees

Through part of West Sacramento, the Sacramento River West Levee sits on or near the top of the bank, and water side levee slopes are often steeper than 3:1. This is particularly true along the South Levee, where the levee crown is near the minimum width, and eroding banks often lie well within the 3:1 waterside levee template.

Along the South Levee, NHC (2007a) evaluated where slopes are steeper than 3:1 by analysis of the bathymetric and topographic maps provided by MBK Engineers (see also HDR, Inc. 2006). This analysis was completed in AutoCAD by drawing a line sloped at 3:1 from the hinge point at the levee crown (edge of road) to the intersection with the existing river bank or bed. A band then was drawn along the bank that indicates the vertical distance between the template and the actual bank. Negative distances indicate that the bank lies inside the template and, therefore, that the observed bank slope is steeper than 3:1. Figures 3-2 and 3-3 of NHC 2007a show the results for Reach 1.

In general, the slopes on the waterside of the Sacramento River South Levee reach are steeper than 3:1, and in some cases are nearly 1.5:1. Excluding Sites 1E and 1H, the erosion sites are all where the existing bank lies well inside the 3:1 design waterside levee template. As discussed in the following section, a large portion of the steep slopes shown on Figures 3-2 and 3-3 of NHC 2007a are covered by riprap revetment and were assumed to be reasonably stable for the purposes of the feasibility-level erosion assessment. The implications of these steep slopes for the geotechnical and civil engineering assessments for FEMA certification are discussed further in Kleinfelder (2007) and HDR, Inc. (2006).

The Sacramento River North Levee has long sections of high ground and over-sized levees and the above analysis is less useful because of the difficulty in defining the appropriate hinge point for the projected waterside levee slope. Instead, Figures 3-4 to 3-6 of NHC 2007a provide typical cross sections for the three reaches along the North Levee, showing both the steep bank slopes and the oversized levee sections. (The typical section in Reach 7 is at the Ayres 62.9R erosion site.) As discussed in Section 2 of NHC 2007a, measurements of berm and levee crown widths where bank erosion was observed, rather than an analysis of waterside levee slopes, were relied on to select erosion sites.

Existing Bank Protection

Long sections of the right (west) bank in the West Sacramento reach are protected, commonly by revetments constructed of quarry rock (riprap), cobble, or concrete rubble. Figures 3-7 through

3-11 of NHC 2007a show the extent of revetment on the right bank of the North and South Levees and also classify the height of the revetment and cover for the rock types included in the USACE database. About 72% of the total bank along the South Levee is protected by riprap, with most protection in the "greater than 20-inch rock" class. Given the riprap gradations discussed below, this class likely refers to the maximum observed size. About 64%, 30%, and 44% of the total bank is protected in Reaches 7, 2, and 8, respectively. The majority of the revetment in Reach 7 consists of rock between 12 and 20 inches, while in Reaches 2 and 8 the revetment is composed mainly of rubble greater than 20 inches. These percentages and rock sizes have not been updated to include the bank protection constructed as emergency levee repairs.

The dates the bank protection works were constructed and dates of significant repairs are not well known. The Supplement to Standard Operation and Maintenance Manual for the Flood Control Project Unit No. 116, from 1955, provides the earliest information on erosion protection constructed to bring levees built by local interests to project standards (Table 3.2-4). The table and a review of historic air photos show that revetment had been constructed by the late 1930s at a number of sites, such as along the railway grade at the downstream end of the South Levee.

Table 3.2-4. Historic Construction to Bring Levees to Project Standards

Job Order	Date	Location	Description
267	December 1937	River mile 54.0 R, lower end of Chicory Bend	Levee setback
422	December 1938	River mile 57.3 R, Van Tassel's	Levee setback standard mattress and bank paving
548	November 1939	River mile 57.0 R, Van Tassel's	Bank protection
549	December 1939	River mile 53.8 R, lower end of Chicory Bend	Bank protection and levee setback
636	October 1940	River mile 52.4, Claybank Bend Bank	Protection
DA-04-167-eng-828	December 1952	Near I Street Bridge	Crown of levee was surfaced for patrol road purposes

Source: Northwest Hydraulic Consultants 2007a.

Since 1955, additional bank protection has been constructed, and the earlier revetment repaired, by DWR, USACE, and RD 900. Much of the existing revetment was constructed in the 1960s, but repairs have occurred as recently as the late 1990s (Northwest Hydraulic Consultants Inc. 2007a.). Design drawings or as-built drawings for the revetments constructed in the 1960s have not been located and were not reviewed for this study. Design drawings are available for the protection constructed for the Emergency Levee Repair Program.

Inspection of the South Levee riprap revetments (Northwest Hydraulic Consultants 2007b) showed that they typically were placed on a slope graded to 2:1. The rock usually extended up the slope to elevations of about 30 feet and often was covered by soil at the highest elevations. Wading at low water levels revealed that the existing revetments extended several feet below the fall water line, to at least 15 to 20 feet from shore. It is not known whether the riprap extends farther from the water line or whether a toe was provided for scour protection at the older sites (construction drawings showing a toe are available for the Emergency Works at RMs 56.1, 56.8, and 62.5). Site inspection showed frequent small slumps and loss of material above low water elevations along the older revetments, apparently from boat wave erosion.

Riprap gradations were measured at four sites along the South Levee and showed median weights between 25 and 50 pounds (Northwest Hydraulic Consultants 2007b). Maximum weights were 150 to 200 pounds and the overall gradations were roughly equivalent to those commonly recommended in the 1960s and 1970s (U.S. Army Corps of Engineers 2006). Existing gradations typically are smaller than the new grading recommended in USACE (2006), particularly at the coarse end of the distribution.

Channel Morphology

Channel Planform

The planform of the lower Sacramento River can be described as generally sinuous, with a mix of irregular, partly entrenched meanders and nearly straight reaches. Meander wavelengths and amplitudes are highly variable, with tight bends along the South Levee, but the width of the channel is consistent except at a few bends. The channel is controlled in many places by bank protection, levees, and resistant outcrops so that lateral migration rates are low.

Historic Dredging and Maintenance

The original Sacramento River shallow-draft channel project was authorized by the River and Harbor Act of March 3, 1875, and as modified in 1882, 1889, and 1892. It provided for improvement of low-water navigation by dredging the Sacramento River to provide a depth of 7 feet, by snagging and construction of temporary wing dams in the Feather River, repairing damages caused by floods, and removing obstructions in the lower Sacramento River (U.S. Army Corps of Engineers 1960). Construction of the shallow-draft 7-foot channel downstream of Sacramento began in 1899 and was completed in 1904.

Improvements to the shallow-draft channel were authorized by the River and Harbor Act of March 3, 1899, and as modified in 1912, 1927, and 1935. WET (1990) estimated that, by 1940, about 186 million cubic yards of sediment had been dredged from the Sacramento River downstream of Sacramento. Major channel maintenance activities ceased in the early 1970s as hydraulic mining debris effects lessened and river transportation needs diminished and environmental concerns associated with dredging moved to the forefront.

Channel Bathymetry

It is documented that bed levels in the lower Sacramento River aggraded substantially, as a result of inflows of sediment derived from hydraulic mining in the Sierra Nevada (Alder 1980; James 1989, 1991). Hydraulic mining operations ceased in the 1880s, and sediment loads to the river were greatly reduced. Subsequently, a degradation or incision of the river bed occurred during the first half of the 20th century. In the second half of the 20th century, some bed degradation and channel widening may have continued, in part as a result of trapping bed sediment and control of the natural flow hydrograph by the upstream reservoirs.

Figure 3-12 of NHC 2007a presents thalweg profiles (the lowest point in the channel invert) for 1908, 1933, and 1997 extending from RM 65 (upstream of the Sacramento Weir) to RM 50 in USGS river miles (upstream of the Freeport gage). In brief, the proposed program area has several sites that experience local scour at bends and narrow channel sections (Tables 3.2-5 and 3.2-6). Additional information is provided below in the Projected Incision and Scour Estimates and Erosion Mechanisms discussion.

Table 3.2-5. Thalweg Depths in 1997 at Three Bend Locations

River Mile	Depth Below Upper Thalweg Envelope[1] (Feet)	Depth Below 200-Year Water Surface (Feet)	Description of Channel Bend
62.3[1]	37	81	Abrupt, 90-degrees
54.5 (1I)[1]	50	91	Abrupt, >90-degree
53.8 (1J)[1]	33	75	Abrupt, >90-degree

Source: Northwest Hydraulic Consultants 2007a.
[1] Sites located within the West Sacramento Program Area.

Table 3.2-6. Thalweg depths and 1997 Elevations at the Erosion Sites

Erosion Site	Approximate RM (USGS)	1997 Thalweg Depth below upper Envelope (Feet)	Elevation of Maximum Depth (Feet, NAVD 88)
1A	57.2	28	-34.43
1B	57.1	20	-27.43
1C-D-E	56.8 to 56.5	15	-21.43
1F	56.4	7	-13.43
1G	55.7	20	-27.43
1H	55.6 to 54.6	20	-27.43
1I	53.8 to 53.4	50	-57.43
1J	53.6	33	-44-41.42
8K and 8L	59.6	5	-10.43
8M	59.3	19	-24.43

Source: Northwest Hydraulic Consultants 2007a.

Change in Cross Sections near the Eroding Sites

Appendix B of NHC 2007a shows historic cross sections near each erosion site, as constructed from the 1908, 1933, and 1997 river surveys (NGVD 29). The 1908 and 1933 survey section locations are only approximate. The 1908 and 1933 cross section data points were rotated and shifted to best fit the 1997 survey. Some spatial errors result from this process.

Table 3.2-7 summarizes the historic changes observed at the toe of the erosion sites since 1908, as interpreted from the fitted cross sections (Appendix B of NHC 2007a). The most significant toe erosion (incision) occurred at Site 1A, likely in response to channel constriction following construction of the Barge Canal headworks. Sites 1B, 1F, and 1I also show significant incision at the toe of the bank.

Table 3.2-7. Cross Section Changes at the Toe of the Eroding Banks

Erosion Site	Net Change in Bed Near Toe of the Bank (Feet)[1]	Comment
1A	-35	Occurred since 1933; likely in response to works associated with barge canal
1B	-20	As above
1C	About zero	
1D	-10	Bed lowering occurred from 1908 to 1933
1E	-8	Occurred since 1933
1F	-15	Occurred since 1933
1G	-12	Occurred since 1933
1H-1/1H-2	+20	Considerable aggradation and growth of bar and berm into the channel
1I	-20	Incision of thalweg at toe of bank
1J	Unknown	Uncertainty with the 1933 cross section
8K	+8	Uncertainty with the 1933 cross section
8L	-7	Occurred since 1933
8M	-5	Occurred since 1933

Source: Northwest Hydraulic Consultants 2007a.

[1] As interpreted for 1908 to 1997 from Appendix C of NHC 2007a; "-" changes are incision; "+" changes are aggradation.

Historic Bank Retreat

Historic bank erosion/channel migration was assessed at each site by comparing air photos from 1938, 1965, 1972, 1982, 1986, 1993, and 2002 (Appendix C of NHC 2007a). Air photos were geo-referenced in GIS and a common reference point—South River Road along the South Levee—was used to measure lateral bank shift from year to year. The bank line was defined as the water's edge along the base of the bank.

Table 3.2-8 shows the bank line shifts calculated at the Reach 1 and Reach 8 sites. Erosion occurred at sites 1A, 1C, 1E, 1I, and 8L at average annual rates between 0.3 and 1 foot/year from 1986 to 2002. Erosion at Site 8L has continued at about the same rate since 1964. The observed erosion is thought to be real and not attributable to errors resulting from comparing the photos. The magnitude of the erosion also is consistent with the bank retreat interpreted from the timber piles that are present at some sites.

Sites 1B, 1D, 8K, and 8M showed no net change in bank alignment from 1986 to 2002. Site 1F, 1G, 1H, 1J, and 8K showed accretion from 1986 to 2002. Sites 1G, 1H, 1J, and 8K are all located on the inside bank of stream bends, where there is a natural tendency for sediment deposition. Site inspections showed accumulation of sand along the lower bank near the summer water line, consistent with the aggradation observed on the air photos.

Table 3.2-8. Historic Bank Line Shifts from 1986 to 2002 and 1964 to 1986

Site	Erosion (5–15 Feet)	Neutral (-5 < 0 < 5 Feet)	Accretion (5–15 Feet)
Bank Line Shift (1986–2002)			
1A	X		
1B		X	
1C	X		
1D		X	
1E	X		
1F			X
1G			X
1H			X
1I	X		
1J			X
8K		X	
8L	X		
8M		X	
Bank Line Shift (1964–1986)			
8K			X
8L	X		
8M		X	

Source: Northwest Hydraulic Consultants 2007a.

Yolo and Sacramento Bypass Reaches (Yolo Bypass Levee, Sacramento Bypass Levee, and Deep Water Ship Channel West Levee—Reaches 5, 6, and 9C)

Levee and Bank Geometry

Deep Water Ship Channel West Levee (Reach 9C)

The West Levee was constructed as part of the development of the DWSC and the Port of Sacramento. Kleinfelder (2007) provides detail on construction methods. The crest elevation of the West Levee is higher than the DWSC East Levee and it is now the *de facto* Yolo Bypass levee.

The uppermost section of the levee (to station 775+00; called Reach 9C.1 by Kleinfelder [2007]) was constructed about 400 to 600 feet west of the DWSC, except where this levee joins the Yolo Bypass Levee. Where they join is the narrowest section of the DWSC West Levee. Much of the area between the DWSC and the levee included containment levees, berms, and cells to hold dredge slurry. Over time, these have been filled, raising land surface elevations to about the height of the levee crest. Figure 4-7 of NHC 2007a provides a typical cross section, showing about a 5:1 slope on the Yolo Bypass side of the levee, a levee crest width of 20 to 30 feet, and the dredge cells on the DWSC side at an elevation of about 27.57 feet NAVD 88). In this sub-reach, the levee is distant from the DWSC with ground elevations above design water levels in the DWSC (see Chapter 5 of NHC 2007a). In this sub-reach, the DWSC west levee is very unlikely to be eroded by boat waves from the east; instead erosion of the levee is more likely to result from wind waves that develop on the Yolo Bypass during flood stages.

From stations 775+00 to about 1000+00 the DWSC West levee was constructed close to the DWSC, and dredge materials have been placed on the Yolo Bypass side of the levee. Figure 4-7 of NHC

2007a provides a typical cross section in this sub-reach, called Reach 9C.2 by Kleinfelder (2007). Here, there is a broad berm on the Yolo Bypass side of the levee with typical elevations between 12.57 and 17.57 feet NAVD 88. In this sub-reach, the levee is distant from the Yolo Bypass and less likely to be eroded by wind waves that develop on the bypass during flood stages and more likely to be eroded by ship and wind waves on the DWSC. The crest of the levee in the most downstream sub-reach of the DWSC West Levee (called Sub-reach 9C.3) is about 8 feet lower than in Reach 9C.2. This part of the levee is overtopped during large floods and, as a result, erosion of the levee will not raise water levels in the Port of Sacramento during the base flood.

Kleinfelder (2007) describes the levee materials in Reach 9C.1 as primarily clays, with lesser amounts of silt, silty sand, and clayey sand. Foundation materials consist of a blanket of clays and silts up to 35 feet thick, underlain by poorly graded sands and occasional gravel layers. Levee soils in Reaches 9C.2 and 9C.3 are similar to those in Reach 9C.1, and foundation materials consist of clay, silt, and some sand, underlain by poorly graded sand.

Sacramento and Yolo Bypass Levees (Reaches 5 and 6)

The levees in the Sacramento and Yolo Bypass are part of the original Federal project levee built in the early 20th century. Kleinfelder (2007) indicates that this levee originally was constructed by clamshell dredge with the local flood basin deposits. Table 3.2-9 summarizes construction undertaken to upgrade the levees in the mid-20th century, as shown in The Supplement to Standard Operation and Maintenance Manual for the Sacramento River Flood Control Project Unit No.116, from 1955.

The Yolo and Sacramento Bypass levees also have been upgraded since the 1950s, most recently in 1998 and 1999 by USACE when the levee crests were raised a maximum of 5 feet, damage from the 1997 flood repaired, and rock revetment added for wave and velocity erosion protection (Northwest Hydraulic Consultants Inc. 2007a). The revetment slumped in February 1998 and again at two sites near the Interstate 80 Bridge in January 2006. The revetment failures appear to result from slumping of saturated clays in the levee and foundation materials, resulting in failure of the revetment. Repairs of these failures are underway by DWR (Northwest Hydraulic Consultants Inc. 2007a). Levee soils are assumed to be similar to those along the DWSC West Levee (Kleinfelder 2007)[3].

[3] NHC had not received or reviewed a geotechnical data report for these levee sections since submittal of NHC 2007a.

Table 3.2-9. Historic Construction to Bring Levees Built by Local Interests to Project Standards

Job Order	Date	Location	Description
W-1105-eng-2940	October 1941	East levee of Yolo Bypass, Sacramento Bypass to the Southern Pacific Railroad	Enlargement of the east levee
W-1105-eng-892	March 1932	East levee of Yolo Bypass from S.P.R.R. to the Yolo Causeway	Enlargement of the east levee
W-1105-eng-2927	November 1940	East levee of Yolo Bypass from Yolo Causeway downstream 0.3 mile	East levee reconstructed
W-1105-eng-1294	November 1934	East levee of Yolo Bypass from the Yolo Causeway south to the south boundary of RD 900	Enlargement of the east levee

Source: Northwest Hydraulic Consultants 2007a.

Existing Bank Protection

There is no formal inventory of bank protection works along the Yolo and Sacramento Bypass levees; however, most of both levees are protected by revetment. As discussed above, revetment was placed on the upper end of the Yolo Bypass east levee and the south Sacramento Bypass levee in the late 1990s. Revetment covers about 540 feet around the pump station outlet in the Sacramento Bypass, consisting of quarry rock with a median size of about 9 inches and a maximum size of 12 inches. The portion of the Sacramento Bypass Levee directly below the Sacramento Weir is lined with concrete.

Casual inspection of the rock revetments along the Yolo Bypass Levee shows that they typically extend from the toe of the levee slope to the top of the levee crest upstream of Interstate 80 and from an elevation of about 27.57 feet (NAVD 88) to the levee crest downstream of Interstate 80 and appear to be designed to resist wind wave erosion. The revetment is constructed of quarry rock with a median size of about 12 inches and a maximum size of 20 inches. There was no evidence of damage from wave erosion along the sections inspected for this study.

Very little protection appears to have been placed along the DWSC West Levee. Kleinfelder (2007) noted revetment along the DWSC side of the levee along the southern part of Reach 9C to prevent boat wave erosion. Field inspection indicated erosion protection along the Yolo Bypass side of this levee, near where it joins the Yolo Bypass Levee.

Structures

Two outfalls from pump stations are located along the Sacramento and Yolo Bypass Levees. The Sacramento Bypass outfall is located at Station 1+50; the Yolo Bypass outfall at Station 79+50. Both outfalls are protected with rock riprap, and erosion was not observed near either outfall location.

Port of Sacramento and Deep Water Ship Channel East Levees (South Cross Levee, Deep Water Ship Channel East Levee, Port North Levee, and Port South Levee—Reaches 3, 4, 9A, and 9B)

Levee and Bank Geometry

DWSC East Levee (Reach 4)

The original Yolo Bypass Levees were incorporated into the DWSC construction, and the Yolo Bypass Levee was relocated to the west in 1960. The DWSC is located between the original levee (to

the east) and the new levee (to the west). Figure 5-2 of NHC 2007a shows a typical cross section of the DWSC East Levee. The levee crown is about 30 feet wide. Levee soils are typically low to high plasticity clays (Kleinfelder 2007). Along the upper levee the foundation materials consist of a blanket of clay that is 10 to 20 feet thick that is underlain by silt and silty sand. A sand layer extends 20 to 40 feet below the blanket of silt and silty sand. Along the lower part of the levee, the sand layer is 5 to 10 feet thick and underlain by highly plastic clay to maximum depths.

Port North and South Levees (Reaches 9A and 9B)

The Port North and South Levees were built in the early 1960s as part of the harbor development from material excavated during construction of the DWSC. The North Levee crest varies between 20.57 and 41.57 feet (NAVD 88) and is not well defined where it crosses high ground. Both the North and South Levees are set about 50 to 150 feet back from the shoreline around the harbor. Figure 5-3 of NHC 2007a provides a typical section through the Port North and South Levees. Levee soils and foundation materials vary considerably around the harbor. Kleinfelder (2007) provides details.

Structures

Kleinfelder (2007) notes two pumping stations along the DWSC East Levee. The Main Drain Pump Station (MDPS) is at about Station 101+00 (see their Plate 2C); another station is at 11+00. Erosion was noted near the outfall of each station (see Appendix A and C of NHC 2007a). Kleinfelder (2007) indicates that construction is underway to upgrade the MDPS and that plans at this site include either raising or flattening overly steep levee sections.

Bank Protection Works

There is no formal inventory of bank protection works placed along the DWSC and Port. Based on a review of available documents and field reconnaissance, there appear to be no designed bank protection works along the DWSC East Levee and the Port Levees. Small amounts of concrete rubble were observed during a brief field reconnaissance in the Port of Sacramento. Kleinfelder (2007) notes that revetment has been placed on the right bank of the DWSC near the southern part of the DWSC West Levee (Reach 9C).

Projected Incision Estimates and Erosion Mechanisms

The descriptions of projected incision and erosion mechanisms below are derived and summarized from NHC 2007a.

Projected Incision—Sacramento River Sites (Sacramento River North and South Levees—Reaches 1, 2, 7 and 8 of the West Sacramento Levee System)

NHC (2007a) examined the thalweg profiles for 1908, 1933, and 1997 for bed elevation trends by drawing smoothed upper and lower envelopes for each survey year, for the reach extending from Verona (RM 79) to Freeport (RM 46). Their analysis indicated the following:

- Over the greater part of the reach that extends downstream from RM 79 (Verona Gage) to RM 46 (Freeport Gage), thalweg levels dropped by an average of about 5 ft over the period 1908–33. This is equivalent to an average of about 0.2 ft/year.
- In the period 1933–1997, levels over the lower two-thirds of the same reach appear to have fallen on average by another 4 ft. This is equivalent to an average of about 0.06 ft/year.

When these assumed rates of incision are plotted as block averages against time and fitted by a smooth descending curve, they suggest a current incision rate of around 0.02 to 0.03 ft/year, probably declining to zero in less than 50 years. Even if the future rate is assumed to average 0.02 ft/year over a period of 50 years, the total future incision would amount to only 1 foot.

Information from various sources indicates that the low-water surface profile falls from about +8.57 ft NAVD 88 at Verona (RM 79) to +4.57 ft NAVD 88 at Freeport (RM 46). These elevations yield average low-water gradients at mean tide level of about 0.12 ft/mile (0.023 m/km) from Verona to Freeport, and 0.043 ft/mile (0.008 m/km) from Freeport to the Delta. These gradients are extremely flat in general terms, and further significant lowering of the quoted low-water levels is unlikely to occur.

In brief, given the apparent rates of incision in the second half of the 20th century and present low-water elevations, further significant incision of the Sacramento River downstream of Verona is unlikely to occur. Any further incision could hardly exceed 1 foot or so, an amount that is negligible compared to potential river-bed scour resulting from major floods.

Erosion Mechanisms

The erosion sites within the proposed program area are nearly all on unprotected banks or on banks where previous protection (often cobbles) has failed; nearly all the sites are along the Sacramento River South Levee (Appendix A of NHC 2007a). Inspections of the erosion sites indicated that the most common failure mechanisms along the right bank of the West Sacramento Reach of the Sacramento River were:

- Wave erosion, particularly from waves generated by recreational boat traffic on the Sacramento River. The erosion from boat traffic occurs during the summer and fall, when water levels are near their annual minima, and results in wave cut benches, steep eroding banks, and slow bank retreat. Erosion from wind-generated waves also occurs on the upper levee slopes during high flow events.
- Failures or slides on the berm, possibly as a result of over-steepening, saturation, toe scour, or other factors.
- Levee encroachment from scour at the toe of the bank where banks are steep below the water level and erosion has progressed into the 3:1 projected waterside slope of the levee template.
- Undermined or undercut trees that result in over-steepened and eroded section on the bank and that eventually will fall over, resulting in loss of bank or levee and further erosion as flows accelerate around the root ball.

These observations are consistent with previous reports on bank erosion along the Sacramento River (Northwest Hydraulic Consultants 2005, 2006; U.S. Army Corps of Engineers 2006).

As discussed earlier, much of the Sacramento River South Levee is protected by riprap revetment. These revetments are in reasonable repair and have withstood floods for 30 or 40 years and have been assumed to continue to provide erosion protection, given adequate maintenance. As such, they have a low risk of failure and a low priority for treatment. However, the rock placed on these slopes has been damaged by wave erosion, it is often smaller than currently recommended for protection from boat wakes and waves (U.S. Army Corps of Engineers 2006), and it is not known whether adequate toe rock was installed to protect against scour. Some upgrades or repairs may be required for certification, depending on standards adopted for these project levees by USACE.

3.2.2.2.5 Levee Deficiency Analysis

Section 4 of HDR, Inc. (2008a) includes the geotechnical assessment of the existing levees with regard to seepage, slope stability, and seismic vulnerabilities[4,5]. The information provided in HDR, Inc. (2008a) is derived from two reports: *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007), and *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007).

Data collection included 323 borings drilled with standard penetration tests (SPTs) and soundings made using cone penetration test equipment (CPTs) along the levees within the basin. Approximate stationing endpoints have been determined by URS (2007) and Kleinfelder (2007) based on similar soil characteristics within the endpoints. Deficiencies identified within the approximate stationing endpoints do not indicate the entire stretch of levee contains said deficiency; rather a deficiency has been identified within the endpoints (HDR, Inc. 2008a).

Levee Seepage Analysis

Engineering analysis evaluating levee seepage along the northern reaches of the basin has been performed by URS (2007), and the findings were presented in their report titled *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007). URS (2007) performed their seepage analysis using water surface elevations that are different from the water surface elevations used in this chapter as determined by MBK Engineers (2007) and assumed a no-flow boundary at the center of the river (HDR, Inc. 2008a).

Table 3.2-10 shows the seepage summary of the northern reaches as completed by URS (2007). Exit gradients of 0.5 or greater for under-seepage require mitigation according to the USACE, and areas where through-seepage has been observed or projected based on soil conditions require mitigation.

Kleinfelder (2007) performed the engineering analysis evaluating levee seepage along the southern reaches of the basin and presented their findings in a report titled *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007). Kleinfelder performed their analysis using the water surface elevations determined by MBK Engineers (2007) and assumed a total head boundary at the center of the river. The South Cross Levee had analysis completed only for the 100-year event because the difference in water surface elevation between the 100-year event and 200-year event is approximately 0.3 foot, and the probability of the South Cross Levee being affected during an event is dependent on failure of the Sacramento River South Levee (HDR, Inc. 2008a).

The seepage summaries for the southern reaches as completed by Kleinfelder (2007) are shown in Table 3.2-10. Exit gradients of 0.5 or greater for under-seepage require mitigation according to USACE, and areas where through-seepage has been observed or projected based on soil conditions require mitigation.

In brief, the Sacramento River North, the Sacramento River South, and the DWSC East Levees have a significant amount of under-seepage, whereas the other reaches have much less extensive under-seepage problems. Through-seepage is prevalent through the Sacramento River North, the

[4] Seismic vulnerabilities are discussed in Chapter 6, Geology, Seismicity, Soils, and Mineral Resources.

[5] HDR, Inc. (2008b) also discusses erosion and levee height deficiencies. Both are discussed below.

Sacramento River South, the Yolo Bypass, and the South Cross Levees. The other reaches have limited through-seepage problems (HDR, Inc. 2008b). See Table 3.2-11 and Figure 4 of HDR, Inc. (2008b) for additional information.

Table 3.2-10. Seepage Summary

	Through-seepage		Under-seepage	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Sacramento River West North Levee				
0+00 to 15+50		✓		
15+50 to 40+00	✓	✓	N	N
40+00 to 57+50		✓		
57+50 to 74+50	N	N	N	N
74+50 to 99+50	✓	✓	✓	✓
99+50 to 133+00				
133+00 to 141+50	✓	✓	✓	✓
141+50 to 186+50	✓	✓	✓	✓
186+50 to 217+00	✓	✓	✓	✓
217+00 to 294+00				
Sacramento Bypass Levee				
0+00 to 40+50				
40+50 to 57+50	✓	✓	✓	✓
57+50 to 64+78	✓	✓		
Yolo Bypass Levee				
0+00 to 21+00				
21+00 to 31+00				
31+00 to 51+00	✓	✓	✓	✓
51+00 to 61+00	✓	✓		
61+00 to 84+00		✓		
84+00 to 134+50	✓*	✓*	✓*	✓*
134+50 to 155+50		✓		
155+50 to 197+00		✓		
Sacramento River West South Levee				
307+00 to 312+50				
245+00 to 307+00			✓	✓
215+50 to 245+00			✓	✓
189+00 to 215+00			✓	✓
129+50 to 189+00				✓
41+00 to 129+50			✓	✓
0+00 to 41+00				
South Cross Levee				
0+00 to 5+00	✓	N		N
5+00 to 25+00	✓	N	✓	N
25+00 to 65+00	✓	N		N
DWSC East				
0+00 to 98+00	✓	✓	✓	✓
98+00 to 145+00			✓	✓

	Through-seepage		Under-seepage	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Port North Levee				
0+00 to 165+00				
165+00 to 205+00				
205+00 to 262+00				
Port South Levee				
0+00 to 138+00			✓	✓
138+00 to 260+00				
DWSC West				
0+00 to 4+00	✓	✓	✓	✓
4+00 to 775+00				
775+00 to 1000+00				
1000+00 to 1134+00				

Source: HDR, Inc. 2008a.
* Failure has been observed, assumed existing toe drain has not been functioning.

Table 3.2-11. Reach Summary

	Seepage, 200-Year Event		Stability, 200-Year Event		
Approximate Stationing	Through Seepage	Under Seepage	Steady State	Rapid Drawdown	Seismic
Sacramento River West North Levee					
0+00 to 15+50	X			N	
15+50 to 40+00	X	N	N	N	N
40+00 to 57+50	X		N	N	N
57+50 to 74+50	N	N	N	N	N
74+50 to 99+50	X	X	X	N	X
99+50 to 133+00			X	N	X
133+00 to 141+50	X	X	X	N	X
141+50 to 186+50	X	X	X	N	N
186+50 to 217+00	X	X		N	X
217+00 to 294+00			N	N	N
294+00 to 307+50					N
Sacramento Bypass Levee					
0+00 to 40+50				N	
40+50 to 57+50	X	X	X	N	X
57+50 to 64+78	X		X	N	X
Yolo Bypass Levee					
0+00 to 21+00			X	N	X
21+00 to 31+00			X	N	X
31+00 to 51+00	X	X	X	N	X
51+00 to 61+00	X		X	N	X
61+00 to 84+00	X		X	N	
84+00 to 134+50	X	X	X	N	X
134+50 to 155+50	X		X	N	X

Approximate Stationing	Seepage, 200-Year Event		Stability, 200-Year Event		
	Through Seepage	Under Seepage	Steady State	Rapid Drawdown	Seismic
155+50 to 197+00	X		X	N	X
Port North Levee					
0+00 to 165+00					N
165+00 to 205+00					N
205+00 to 250+00					N
Port South Levee					
0+00 to 119+50					N
119+50 to 128+50		X			N
128+50 to 189+50					N
DWSC West					
0+00 to 40+00	X	X			N
40+00 to 775+00					N
775+00 to 1000+00					N
1000+00 to 1134+00					N
DWSC East					
0+00 to 2+00					N
2+00 to 15+00	X	X	X	X	N
15+00 to 96+50					N
96+50 to 105+50		X	X	X	N
105+50 to 145+00					N
Sacramento River West South Levee					
0+00 to 41+00				X	X
41+00 to 129+50		X	X	X	X
129+50 to 189+00		X	X	X	X
189+00 to 215+00		X	X	X	X
215+50 to 245+00		X	X	X	X
245+00 to 307+00		X	X	X	X
307+00 to 312+50				X	X
312+50 to 332+50					N
South Cross Levee					
0+00 to 5+00	X*	N	X*	X*	N
5+00 to 25+00	X*	X*	X*	X*	N
25+00 to 65+00	X*	N	X*	X*	N

Source: HDR, Inc. 2008b.
* South Cross Levee Analyzed at 100-Year Event Only.
N = No Analysis; X = Deficiency; Blank Cell = No Deficiency.

Levee Slope Stability Assessment

URS (2007) completed an engineering evaluation of levee slope stability and the effect of rapid drawdown for the northern reaches of the basin and presented their findings in the report titled *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007). As with the levee seepage analysis described above, URS (2007) used water surface elevations that are different

from the water surface elevations determined by MBK Engineers (2007) in their analysis of slope stability[6]. Rapid drawdown calculations have been completed only for the 100-year event as recommended to URS by their Independent Consulting Board (HDR, Inc. 2008a).

The slope stability results as completed by URS (2007) for the northern reaches are shown in Table 3.2-12.

Kleinfelder (2007) performed the engineering analysis evaluating levee slope stability and the effect of rapid drawdown along the southern reaches of the basin and presented their findings in a report titled *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007). Kleinfelder (2007) performed their analysis using the water surface elevations determined by MBK Engineers (2007). The South Cross Levee had analysis completed only for the 100-year event because the difference in water surface elevation between the 100-year event and 200-year event is approximately 0.3 foot, and the probability of the South Cross Levee being affected during an event is dependent on failure of the Sacramento River West South Levee (HDR, Inc. 2008a).

The slope stability findings for the southern reaches as completed by Kleinfelder (2007) are shown in Table 3.2-12.

In brief, the Sacramento River North, the Sacramento River South, the Sacramento Bypass, and the Yolo Bypass levees have significant steady state stability deficiencies. The other reaches have less or none. Rapid drawdown stability appears to be a significant problem only along the Sacramento River South Levee (HDR, Inc. 2008b). See Table 3.2-11 and Figure 5 of HDR, Inc. (2008b) for additional information.

Table 3.2-12. Slope Stability Summary

	Steady State		Rapid Drawdown	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Sacramento River West North Levee				
0+00 to 15+50			✓	N
15+50 to 40+00	N	N	N	N
40+00 to 57+50	N	N	N	N
57+50 to 74+50	N	N	N	N
74+50 to 99+50	✓	✓		N
99+50 to 133+00	✓	✓		N
133+00 to 141+50	✓	✓		N
141+50 to 186+50	✓	✓		N
186+50 to 217+00				N
217+00 to 294+00	N	N	N	N
Sacramento Bypass Levee				
0+00 to 40+50			✓	N
40+50 to 57+50		✓		N
57+50 to 64+78	✓	✓	✓	N

[6] Sections of the northern reaches have not been completed to date by URS; these sections will be completed in their final report projected to be issued at a later time.

	Steady State		Rapid Drawdown	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Yolo Bypass Levee				
0+00 to 21+00	✓	✓	✓	N
21+00 to 31+00	✓	✓	✓	N
31+00 to 51+00	✓	✓		N
51+00 to 61+00	✓	✓	✓	N
61+00 to 84+00	✓	✓	✓	N
84+00 to 134+50	✓*	✓*	✓*	N
134+50 to 155+50	✓	✓		N
155+50 to 197+00	✓	✓		N
Sacramento River West South Levee				
307+00 to 312+50			✓	✓
245+00 to 307+00	✓	✓	✓	✓
215+50 to 245+00	✓	✓	✓	✓
189+00 to 215+00	✓	✓	✓	✓
129+50 to 189+00	✓	✓	✓	✓
41+00 to 129+50	✓	✓	✓	✓
0+00 to 41+00			✓	✓
South Cross Levee				
0+00 to 5+00	✓	N	✓	N
5+00 to 25+00	✓	N	✓	N
25+00 to 65+00	✓	N	✓	N
DWSC East				
0+00 to 98+00	✓	✓	✓	✓
98+00 to 145+00				
Port North Levee				
0+00 to 165+00				
165+00 to 205+00				
205+00 to 262+00				
Port South Levee				
0+00 to 138+00				
138+00 to 260+00				
DWSC West				
0+00 to 4+00				
4+00 to 775+00				
775+00 to 1000+00				
1000+00 to 1134+00				

Source: HDR, Inc. 2008a.
* Failure has been observed, assumed existing toe drain has not been functioning.

Levee Geometry Evaluation

To evaluate the crown width and side slopes of the levees in the proposed program area, HDR, Inc. (2008a) generated topography data by means of Light Detection and Ranging (LIDAR) using the North American Vertical Datum of 1988 (NAVD88).

USACE requires that levees have a maximum steepness of 3:1 (H:V) waterside slopes and 3:1 (H:V) landside slope. The design criterion for the WSLIP requires that the levees have 3:1 (H:V) for both waterside and landside slopes. Crown widths for primary levees are to be a minimum of 20 feet.

Refer to Appendix B in HDR, Inc. (2008a) for tables identifying sections of the levees that do not meet the design criterion. Appendix D in HDR, Inc. (2008a) contains LIDAR cross sections that have been used to evaluate levee geometry. Also refer to Figure 9 of HDR, Inc. (2008b), which shows the approximate locations where a geometry deficiency has been identified.

In brief, most of the levees in the proposed program area, with the exceptions of the Port South and DWSC East Levees, have a geometry deficiency, and typically it is an over-steepened waterside slope that is the primary problem (HDR, Inc. 2008b).

Erosion Evaluation

An inventory of current bank erosion sites has been performed to identify sections of the levee that might incur future stability or seepage problems because of bank erosion. The erosion sites have been identified by visual inspection of the entire proposed program area. Table 3.2-11 and Figure 7 of HDR, Inc. (2008b) summarize the results of the erosion evaluation. The sites have been prioritized based on significance of repairs needed to meet FEMA certification. The Sacramento River North Levee has three high priority sites totaling more than 1,100 feet. With the exception of one other long reach along the Yolo Bypass, there were no other high priority sites located in the northern West Sacramento basin (HDR, Inc. 2008b).

More than 4,000 feet of the Sacramento River South Levee were identified as having high priority erosion sites and another 1,000 feet were identified as having moderate priority erosion sites. The DWSC East Levee has two moderate priority erosion sites, both near the two pumping stations. The DWSC West Levee has the most significant degree of erosion with 60,000 feet of high priority erosion sites (HDR, Inc. 2008b).

For a complete summary of levee deficiencies, refer to Chapter 1, Introduction.

3.2.2.2.6 Flooding

Levees along the Sacramento River and other waterways provide flood control for the city of West Sacramento and conveyance for waters from upstream to the Delta. High winter flows can stress levees and berms. Longer flood durations can contribute to levee seepage and potentially structural levee failure. Flood water surface elevations also can exceed levee heights and cause overtopping and partially controlled flooding of the protected areas behind the levee. Overtopped levees may maintain structural integrity and would not be considered failed levees. However, the erosive forces that occur during overtopping eventually may cause a structural failure and uncontrolled flooding in the protected areas behind the levee. To maintain the integrity of the flood control system, locations with the potential for failure have been and are being identified and remedied.

MBK Engineers (2007, 2008a, and 2008b) has developed water surface profiles for use in this analysis. Their reports describe and present the results of a hydraulic analysis that was made to determine 1/100 and 1/200 AEP (commonly referred to as 100-year and 200-year) water surface elevations in the surrounding waterways, as well as the potential worst case flood depth for the South Cross Levee. The MBK version of the Comprehensive Study Sacramento River UNET model adopted for the Natomas Levee Improvement Program was used for this analysis. This adopted

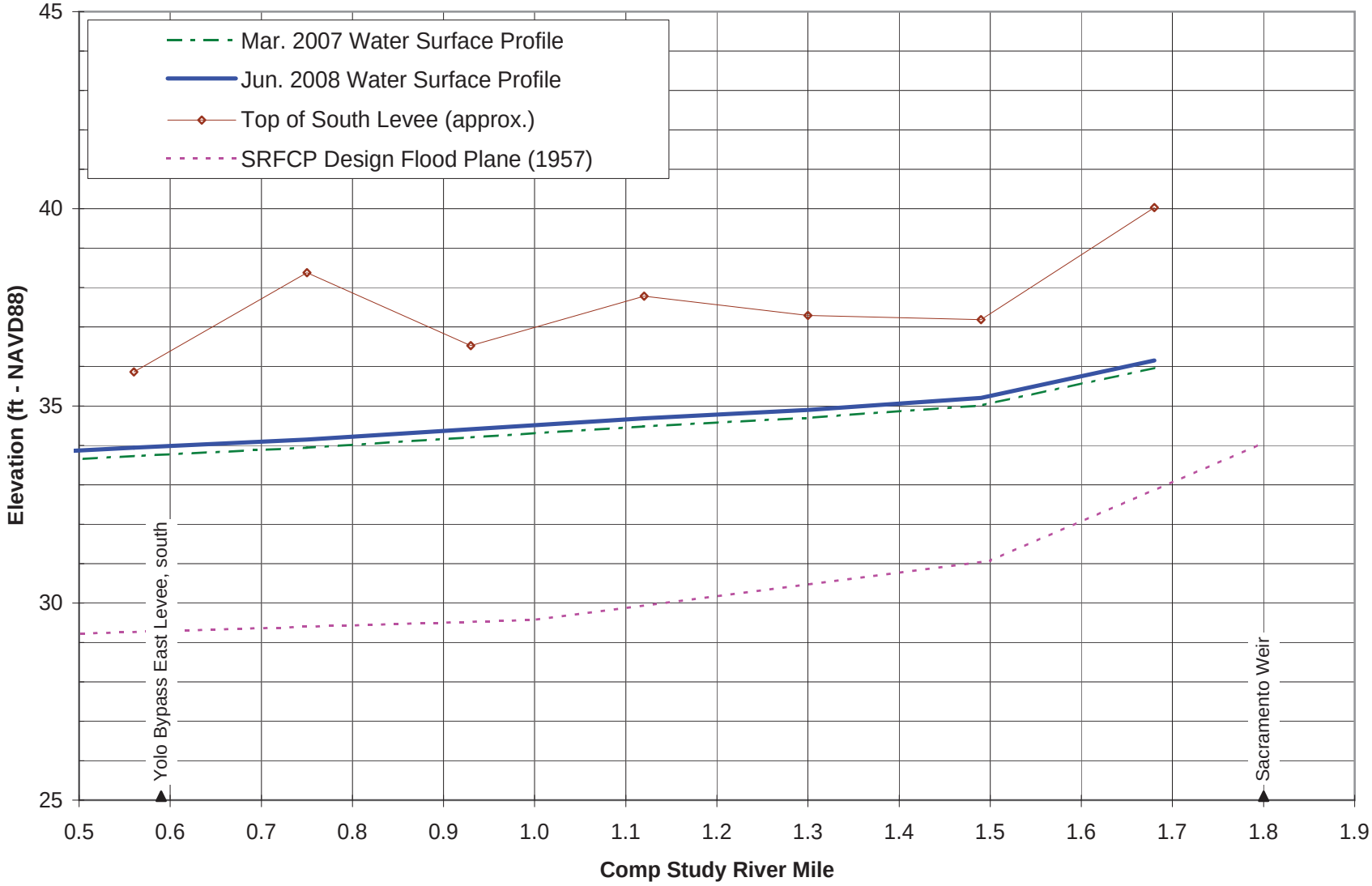
version is capable of modeling anticipated levee breaks or of allowing levee overtopping without failures. UNET is a one-dimensional unsteady open-channel flow model with the ability to simulate exchange of flow over levees with storage areas. The MBK UNET model results were a maximum composite of simulations made using hydrologic data for two storm centering scenarios: Sacramento River at latitude of Sacramento and Feather River at Shanghai Bend. In addition, the American River peak flow in the 100-year flood was 145,000 cfs, the current FEMA condition and in the 200-year flood was 160,000 cfs, the expected future peak flow.

The resulting maximum water surface elevation profiles (for the 1/100 and 1/200 AEPs), the approximate tops of the levees, and the original 1957 Flood Control Project design floodplain for the Sacramento River, Sacramento Bypass, Yolo Bypass, and DWSC are provided in Figures 3.2-4 through 3.2-7 and Table 3.2-13.

The MBK UNET model indicates no levee overtopping will occur along the Sacramento River, Sacramento Bypass, Yolo Bypass, or the DWSC for the 100-year or the 200-year design floodflows. However, levee height criteria are not met for various reaches, specifically the Sacramento River North Levee, the Port North Levee, the Port South Levee, the DWSC West Levee, and the South Cross Levee. More information is provided in MBK Engineers' *Hydraulics Report for the City of West Sacramento Levee Alternatives Analysis* (2007) and Northwest Hydraulic Consultants' *West Sacramento Levees System: Problem Identification Report, Erosion Assessment and Treatment Alternatives, Draft for Review* (2007a).

Table 3.2-13. Computed Maximum Water Surface Elevations

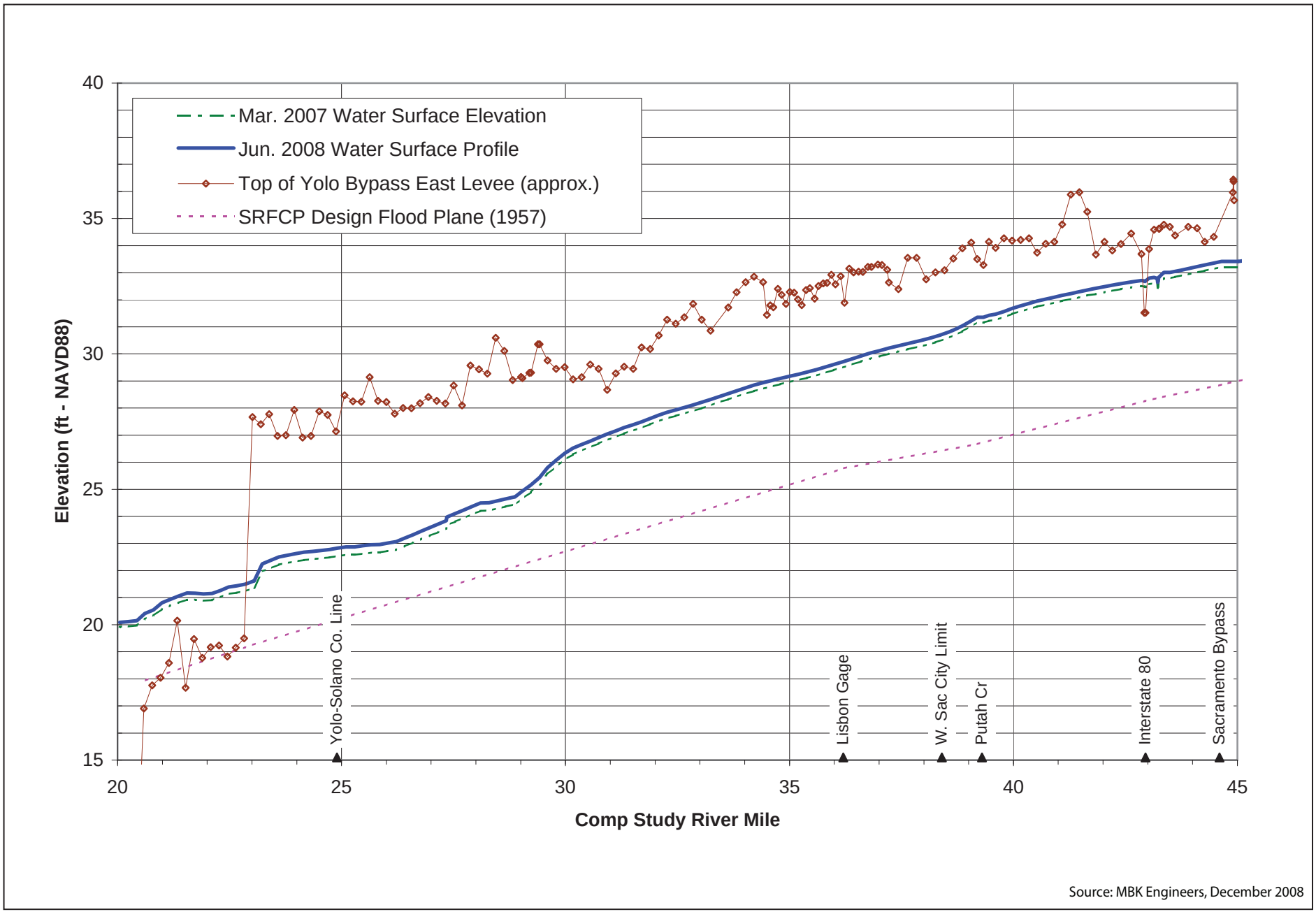
Reach	Comp Study River Mile	Maximum Water Surface Elevation (feet NAVD 88) 1/100 AEP [1]	1/200 AEP [2]	Note
Sacramento River	63.44	35.47	36.57	West Sacramento city limit
Sacramento River	62	35.47	36.67	
Sacramento River	60.5	35.47	36.67	American River
Sacramento River	59.695	35.17	36.37	I Street Bridge
Sacramento River	58	34.67	36.37	
Sacramento River	56	33.57	34.77	
Sacramento River	54	32.57	33.77	
Sacramento River	51.75	31.47	32.67	West Sacramento city limit
Sacramento Bypass	1.68	34.97	36.17	Downstream of Sacramento Weir
Sacramento Bypass	1.3	33.57	34.87	
Sacramento Bypass	0.93	33.27	34.37	
Sacramento Bypass	0.56	32.77	33.97	Yolo Bypass east levee
Yolo Bypass	44.8	32.27	33.47	West Sacramento city limit
Yolo Bypass	43.49	31.87	32.97	Willow Slough
Yolo Bypass	43.24	31.67	32.87	SPRR Bridge
Yolo Bypass	42.96	31.57	32.67	Interstate 80
Yolo Bypass	42	31.37	32.47	
Yolo Bypass	40	30.57	31.67	
Yolo Bypass	39.33	30.27	31.37	Putah Creek
Yolo Bypass	38.4	29.67	30.77	West Sacramento city limit



Source: MBK Engineers, December 2008

00875.07 EIS/EIR (03-10) AB

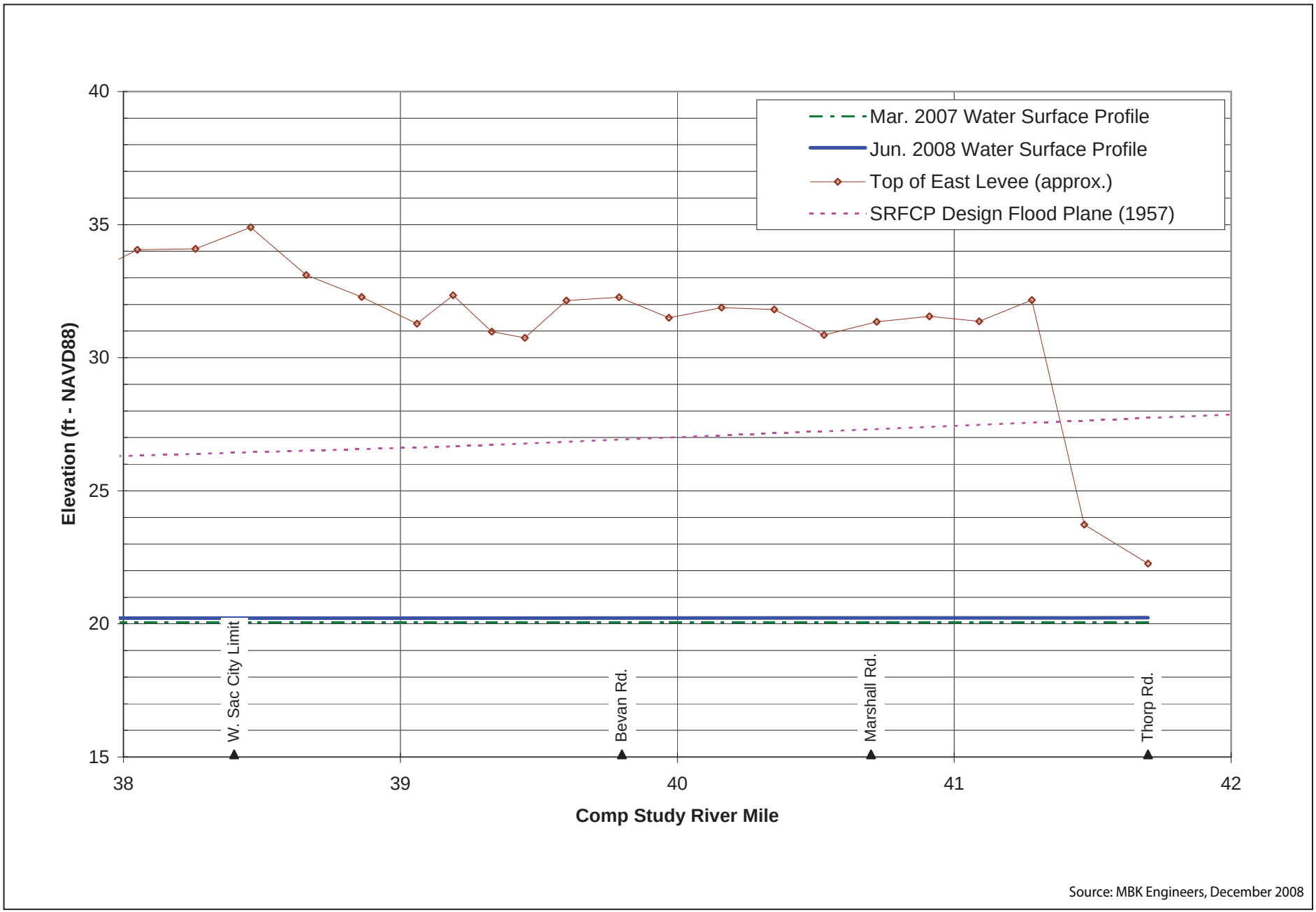
Figure 3.2-5
Maximum Water Surface Elevation, Sacramento Bypass



Source: MBK Engineers, December 2008

00875.07 EIS/EIR (03-10) AB

Figure 3.2-6
Maximum Water Surface Elevation, Yolo Bypass



Source: MBK Engineers, December 2008

00875.07 EIS/EIR (03-10) AB

Figure 3.2-7
Maximum Water Surface Elevation, Sacramento River Deep Water Ship Channel

Reach	Comp Study River Mile	Maximum Water Surface Elevation (feet NAVD 88) 1/100 AEP [1]	1/200 AEP [2]	Note
Yolo Bypass	36	28.57	29.57	
Yolo Bypass	34	27.67	28.77	
Yolo Bypass	32	26.57	27.67	
Yolo Bypass	30	25.27	26.37	
Yolo Bypass	28	23.07	24.27	
Yolo Bypass	26	21.67	22.97	
Yolo Bypass	24	21.37	22.67	
Yolo Bypass	23	20.37	21.57	
Deep Water Ship Channel	41.70	19.07	20.27	Carlin Drive (extended)
Deep Water Ship Channel	40.72	19.07	20.27	Marshall Road
Deep Water Ship Channel	39.79	19.07	20.27	Bevan Road
Deep Water Ship Channel	38.46	19.07	20.27	West Sacramento city limit

Source: MBK Sacramento River UNET hydraulic model simulations documented in *Supplemental Report for the City of West Sacramento Levee Alternatives Hydraulic Analysis—Draft,* December 4, 2008.

[1] Assumes levees overtop without failing; existing conditions and operations.

[2] Assumes levees overtop without failing; urban levees have three feet of freeboard on 1/200 AEP water surface; non-urban levees satisfy SRFCP design freeboard requirements; Folsom Dam Joint Federal Project in place.

Flood Elevations and Levee Height Evaluation by Reach

As described in Section 4.3 of HDR, Inc. (2008a), the hydraulic models developed by MBK Engineers for 100-year and 200-year water surface flood conditions along the Sacramento River, DWSC, Sacramento Bypass, and Yolo Bypass have been used to assess levee conditions. Elevations have been presented in NAVD 88.

Freeboard is the additional levee height above the *adopted floodplain* (U.S. Army Corps of Engineers 1963), or as MBK Engineers 2008a, b) has phrased it, the *design water surface*. For the Sacramento River Flood Control Project, the adopted flood plane is the *project design floodplain* shown in the 1957 profiles.

Results from the hydraulic models have been used to assess levee height adequacy as compared to Federal and local agency criteria. All criteria must be considered, as policies are not consistent from agency to agency. As previously discussed in the Regulatory Setting section, the freeboard criteria as provided by the relevant agencies are summarized below.

- **FEMA**. Riverine levees must provide a minimum freeboard of 3 feet above the water-surface level of the base flood. An additional 1 foot above the minimum is required within 100 feet either side of structures (such as bridges) riverward of the levee or wherever the flow is constricted. An additional 0.5 foot above the minimum at the upstream end of the levee, tapering to not less than the minimum at the downstream end of the levee, is also required.

- **USACE.**
  - Sacramento River Levee: 3 feet
  - Sacramento Bypass Levee: 6 feet
  - Yolo Bypass Levee: 6 feet
  - DWSC Levees, Port North Levee, and Port South Levee: 3 feet for the Port (Turning Basin and Barge Channel) and 6 feet for the DWSC where it is adjacent to the Yolo Bypass
- **WSAFCA**. WSAFCA has no minimum freeboard requirements; rather, it uses the minimum freeboard requirements set forth by USACE.

Sacramento River South Levee

Figure 3.2-4 (MBK Engineers 2008a, b) shows the design water surface elevation profiles for the 1/100 and 1/200 AEPs, the approximate top of the west levee, and the original Federal Project Design Flood Plain from 1957 for the Sacramento River. As shown on the figure, water surface elevation for Sacramento River South Levee ranges between 30.99 and 35.42 feet in NAVD 88 for the 100-year flood, and between 32.16 and 36.61 NAVD 88feet for the 200-year flood on the Sacramento River.

Figure 3.2-8 (HDR, Inc. 2008a) shows the existing levee crown versus the computed flood water surface elevations. Throughout this reach, 3 feet of freeboard is maintained for both the 100-year and 200-year design floods (HDR, Inc. 2008a).

South Cross Levee

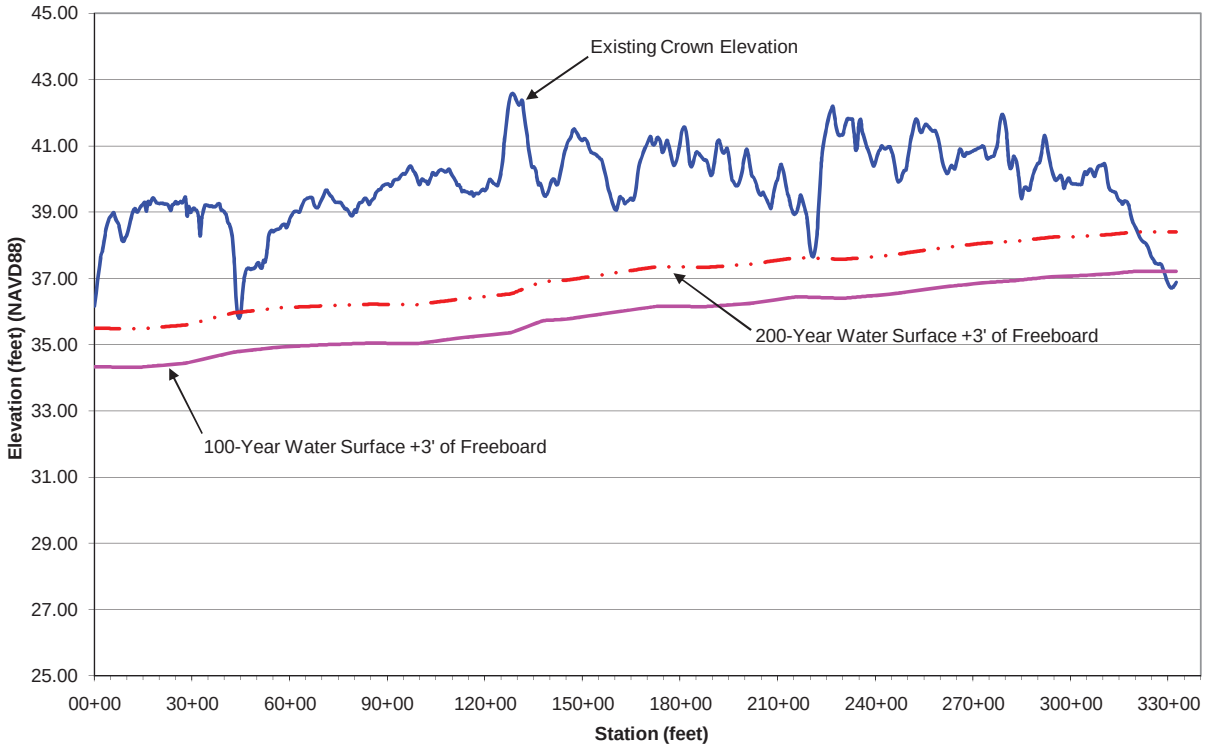
For the South Cross Levee, MBK Engineers developed 100-year and 200-year water surfaces considering a breach along the right bank of the Sacramento River (west levee) just downstream of the South Cross Levee. Figure 11 of MBK Engineers (2007) illustrates that the water surface elevation for South Cross Levee is 26.27 feet (NAVD 88) for the 100-year event and 26.67 feet for the 200-year event. MBK Engineers (2007) described in detail how the water surface elevations at the secondary levee at South Cross Levee have been developed (see Figures 7-11 of MBK Engineers [2007]).

More recently, MBK's 2007 analysis was updated with the current (MBK Engineers 2008a, b) hydraulic model and the results are presented and compared with those from the 2007 report in Table 10 and Figures 35 and 36 of MBK Engineers 2008a, b. The peak stage in feet (NAVD 88) for the 100-year event increased from 26.27 to 26.57 feet and the peak stage in feet (NAVD 88) for the 200-year event increased from 26.67 to 26.87 feet NAVD 88.

Figure 3.2-9 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 3 feet of freeboard above the 100-year and 200-year water surfaces. As shown in the figure, there is inadequate levee height on the South Cross Levee to provide at least 3 feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Port South Levee

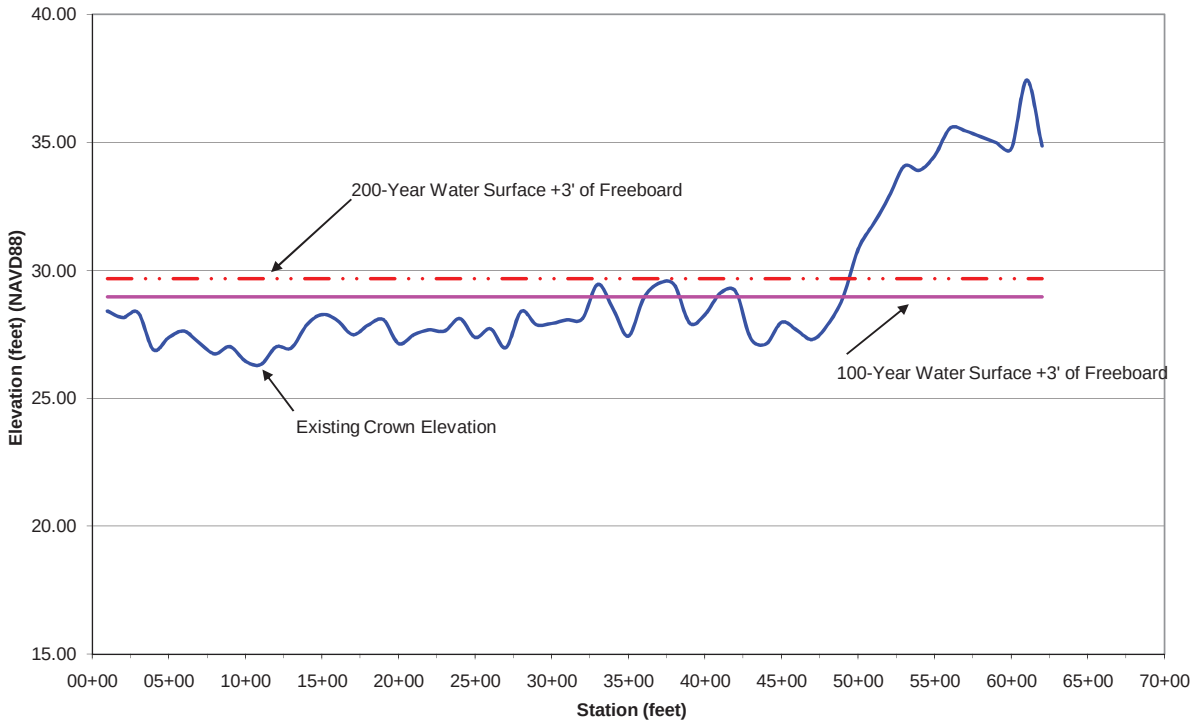
The water surface elevation for Port South Levee remains constant at 18.8 feet (NAVD 88) for the 100-year event and 17.49 feet for the 200-year event on the Sacramento River (MBK Engineers 2007 as cited in HDR, Inc. 2008a).



Source: HDR, Inc., January 2008

Figure 3.2-8
Freeboard Evaluation of Sacramento River West South Levee

00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-9
Freeboard Evaluation of South Cross Levee

00875.07 EIS/EIR (03-10) AB

Figure 3.2-10 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 3 feet of freeboard above the 100-year and 200-year water surfaces. As shown on the graph, there is inadequate levee height on the Port South Levee to provide at least 3 feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

DWSC East and West Levees

Figure 3.2-4 (MBK Engineers 2008a, b) shows the design water surface elevation profiles for the 1/100 and 1/200 AEPs, the approximate top of the east levee, and the original Federal Project Design Flood Plain from 1957 for the DWSC. As shown on the figure, the water surface elevation for the DWSC Levee is mostly 19.05 feet (between Comp Study River Miles 38.26 and 41.65) (NAVD 88) for the 100-year flood and between 20.21 and 20.23 feet (between Comp Study River Miles 38.26 and 41.65) for the 200-year flood on the Sacramento River.

Figure 3.2-11 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 3 feet of freeboard above the 100-year and 200-year water surfaces. As shown on the figure, there is adequate levee height on the DWSC East to provide at least 3 feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Figure 3.2-12 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 3 feet of freeboard above the 100-year and 200-year water surfaces[7]. As shown on the figure, there is inadequate levee height on the DWSC West Levee based on the Yolo Bypass water data to provide at least 3 feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Sacramento River North Levee

Figure 3.2-4 (MBK Engineers 2008a, b) shows the design water surface elevation profiles for the 1/100 and 1/200 AEPs, the approximate top of the west levee, and the original Federal Project Design Flood Plain from 1957 for the Sacramento River. As shown on the figure, water surface elevation for Sacramento River South Levee ranges between 30.99and 35.42 feet in NAVD 88 for the 100-year flood, and between 32.16 and 36.61 feet for the 200-year flood on the Sacramento River.

Figure 3.2-13 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 5.57 NAVD 88 feet of freeboard above the 100-year and 200-year water surfaces. As shown on the graph, there is inadequate levee height on the Sacramento River North Levee to provide at least 5.57 NAVD 88 feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Sacramento Bypass Levee

Figure 3.2-5 (MBK Engineers 2008a, b) shows the design water surface elevation profiles for the 1/100 and 1/200 AEPs, the approximate top of the South Levee, and the original Federal Project Design Flood Plain from 1957 for the Sacramento Bypass Levee. As shown on the figure, the water surface elevation for the Sacramento Bypass Levee ranges between 33.13 and 34.94 feet (NAVD 88) for the 100-year flood and between 33.94 and 36.15feet for the 200-year flood on the Sacramento River.

[7] Note that FEMA has a 3 foot freeboard requirement, but USACE has a 6 foot requirement for the DWSC where it is adjacent to the Yolo Bypass.

Figure 3.2-14 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 5.57 (NAVD 88) feet of freeboard above the 100-year and 200-year water surfaces[8]. As shown on the graph, there is adequate levee height on the Sacramento Bypass Levee to provide at least 5.57 (NAVD 88) feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Yolo Bypass Levee

Figure 3.2-6 (MBK Engineers 2008a, b) shows the design water surface elevation profiles for the 1/100 and 1/200 AEPs, the approximate top of the East Levee, and the original Federal Project Design Flood Plain from 1957 for the Yolo Bypass Levee. As shown on the figure, the water surface elevation for Yolo Bypass Levee ranges between below 23.38 (at Comp Study River Mile 28.87) and 32.23 feet (NAVD 88) for the 100-year event, and between below 24.72 (at Comp Study River Mile 28.87) and 33.36 feet for the 200-year event.

Figure 3.2-15 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 5.57 (NAVD 88) feet of freeboard above the 100-year and 200-year water surfaces[9]. As shown on the graph, there is adequate levee height on the Yolo Bypass Levee to provide at least 5.57 feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Port North Levee

The water surface elevation for Port North Levee is 18.72 feet (NAVD 88) for the 100-year flood and 20.06 feet for the 200-year flood event on the Sacramento River (MBK Engineers 2007 as cited in HDR, Inc. 2008a).

Figure 3.2-16 (HDR, Inc. 2008a) shows the existing crown versus the requirements of 5.57 feet of freeboard above the 100-year and 200-year water surfaces. As shown on the graph, there is inadequate levee height on the Port North Levee to provide at least 5.57 (NAVD 88) feet of freeboard over both the 100-year and 200-year water surfaces (HDR, Inc. 2008a).

Federal Emergency Management Agency Mapping Efforts

Based on the FEMA FIRMs, the locations of the designated floodplains in the study area are shown on Figures 3.2-17 and 3.2-18, and are summarized below.

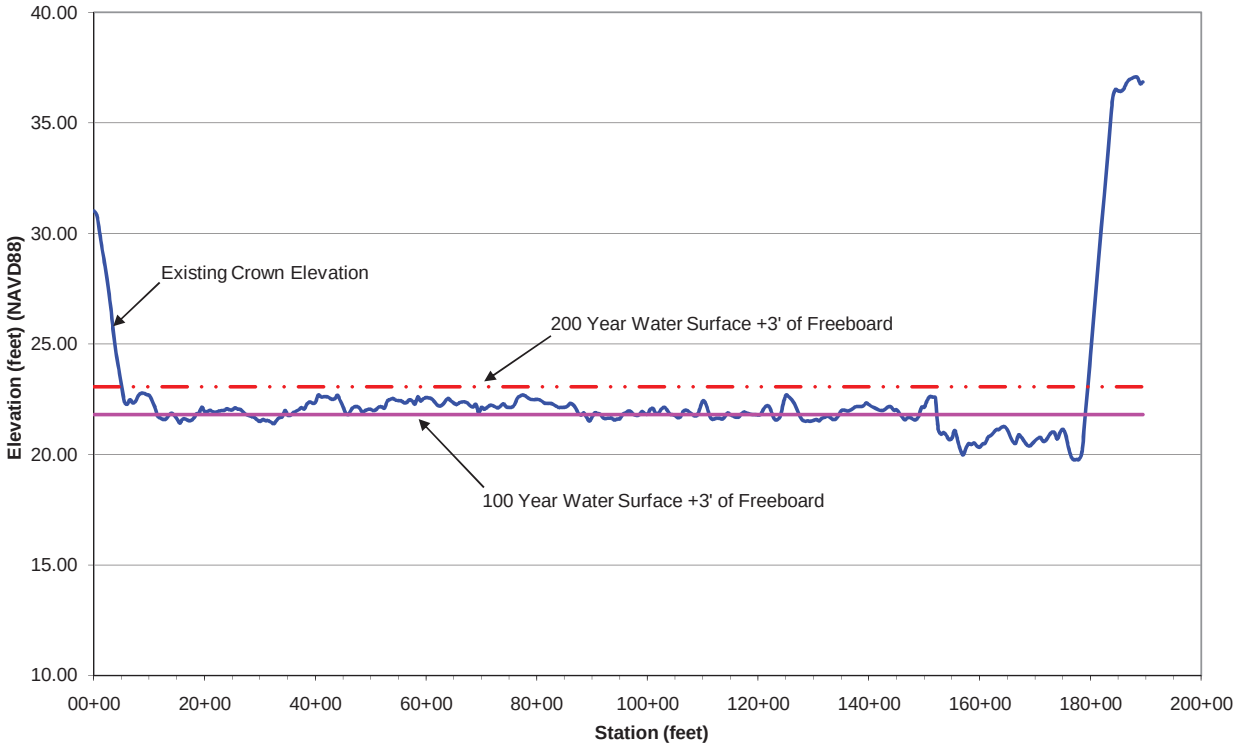
Federal Emergency Management Agency Parcel # 0607280005B City of West Sacramento, last updated 1995

The northern border of this area is the Sacramento Bypass and the southern border is near the Port of Sacramento. The eastern border is the toe drain on the west side of the DWSC, and the western border is the Sacramento River (Figure 3.2-17).

This residential-industrial area in the middle of the map is zoned by FEMA as being protected from the 1% chance of a 100-year flood by levee, dike, or other structures subject to possible failure of overlapping during longer floods. The Sacramento River, the toe drain, and the area northwest of the

[8] Note that FEMA has a 3-foot freeboard requirement, but USACE has a 6-foot requirement for the Sacramento Bypass Levee.

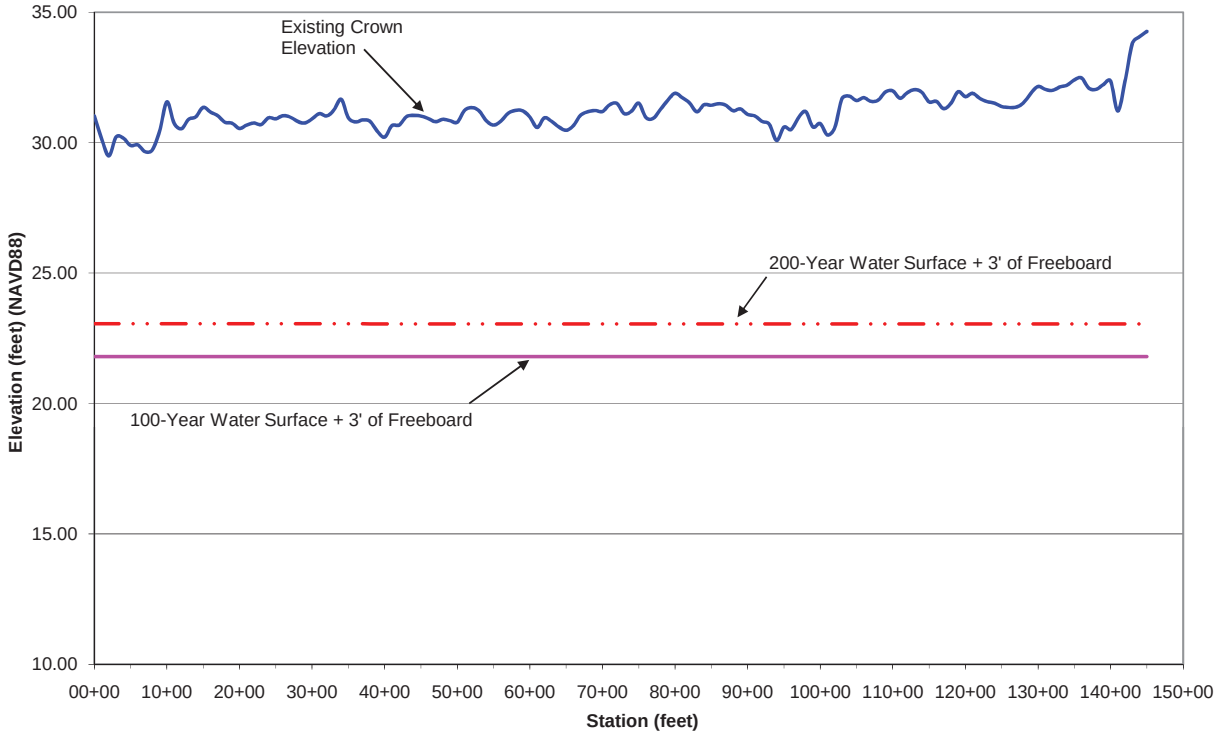
[9] Note that FEMA has a 3-foot freeboard requirement, but USACE has a 6-foot requirement for the Yolo Bypass Levee.



Source: HDR, Inc., January 2008

Figure 3.2-10
Freeboard Evaluation of Port South Levee

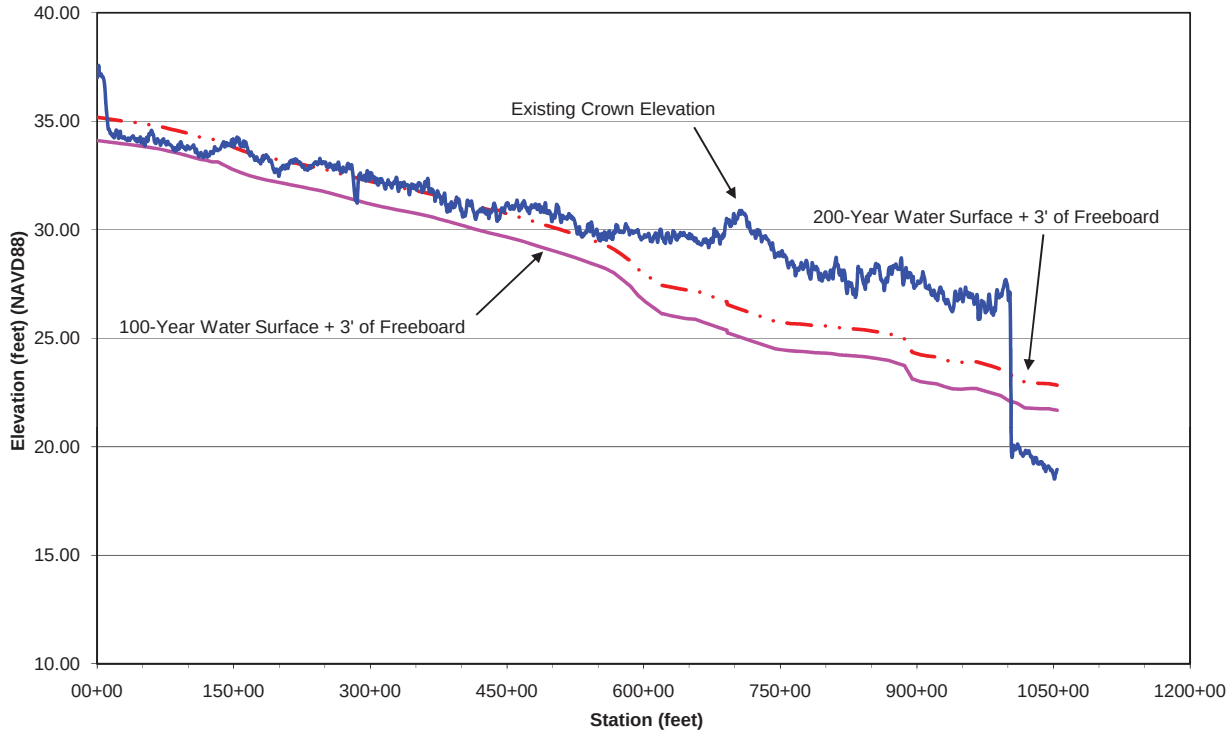
00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-11
Freeboard Evaluation of DWSC East

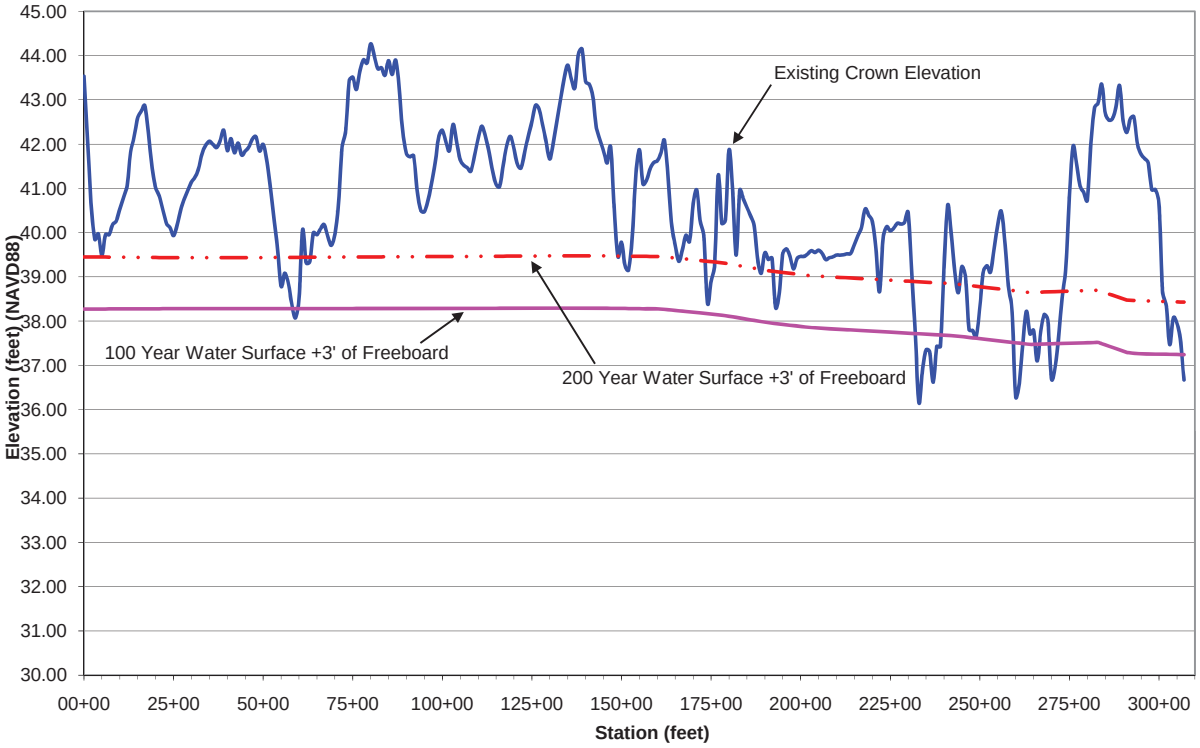
00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-12
Freeboard Evaluation of DWSC West

00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-13
Freeboard Evaluation of Sacramento River West North Levee

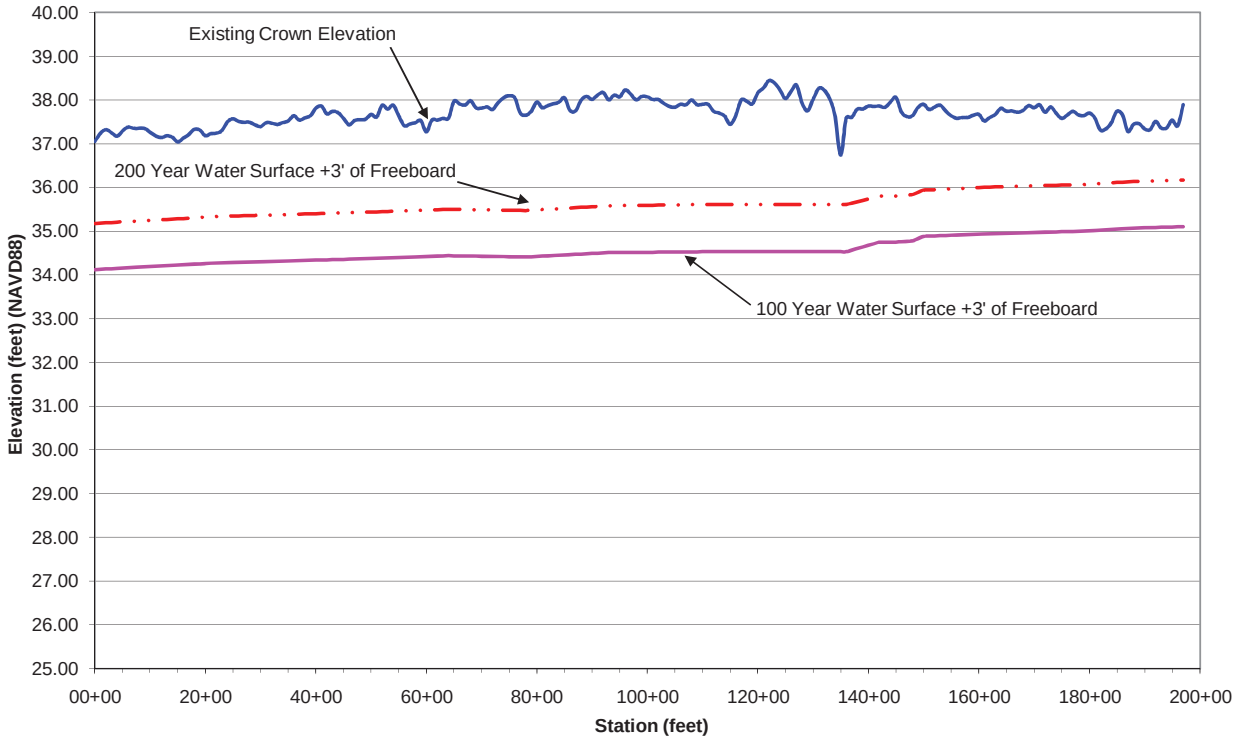
00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-14
Freeboard Evaluation of Sacramento Bypass Levee

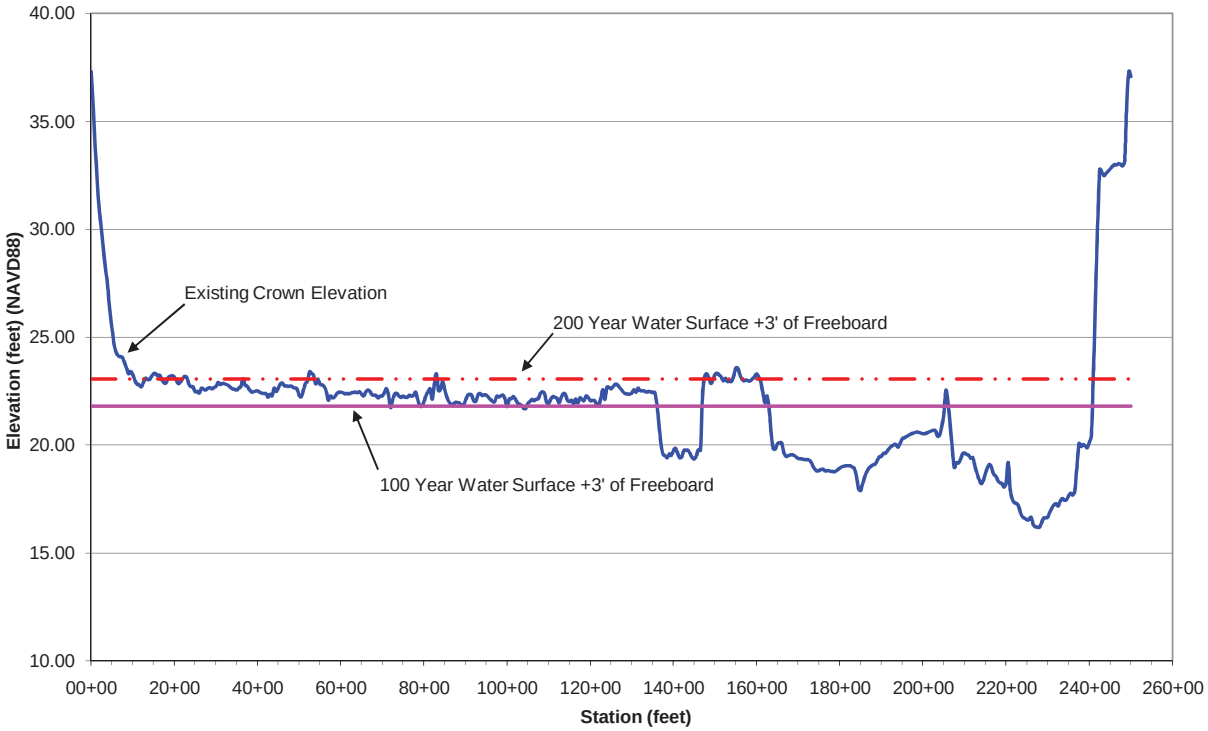
00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-15
Freeboard Evaluation of Yolo Bypass Levee

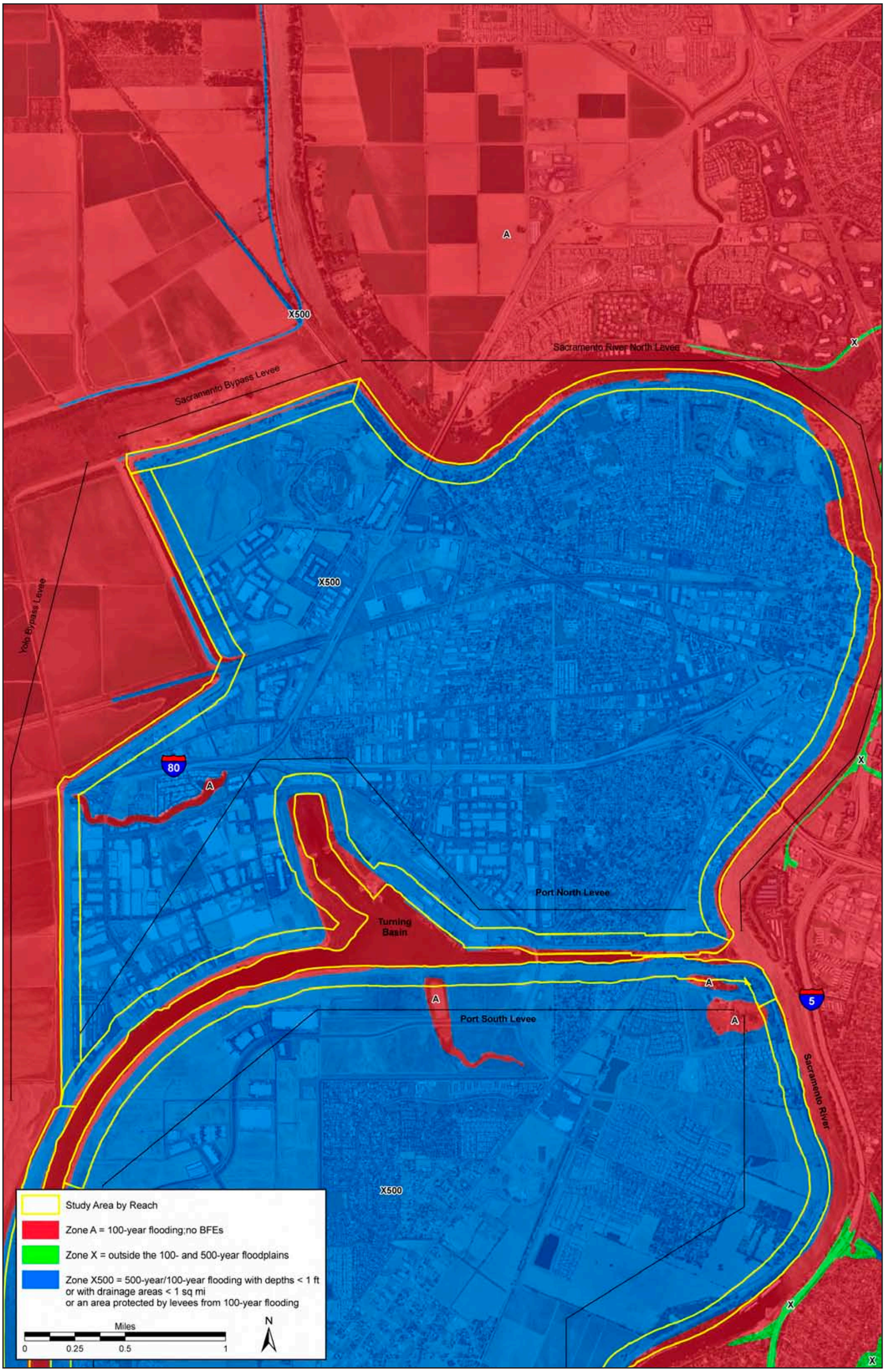
00875.07 EIS/EIR (03-10) AB



Source: HDR, Inc., January 2008

Figure 3.2-16
Freeboard Evaluation of Port North Levee

00875.07 EIS/EIR (03-10) AB



00875.07 EIS (8-09)

Figure 3.2-17
Federal Emergency Management Agency Parcel # 0607280005B



00875.07 EIS (8-09)

Figure 3.2-18
Federal Emergency Management Agency Parcel # 0607280010B

Interstate 80 / US Highway 50 area on the western end of the FEMA Map are designated as Zone AE. The water areas of the Port of Sacramento and Lake Washington are defined as Zone A.

Federal Emergency Management Agency Parcel # 0607280010B City of West Sacramento, last updated 1995

The northern border of the parcel map is the DWSC near the Port of Sacramento, the southern border is Riverview, the eastern border is the Sacramento River, and the western border is the toe drain on west side of the DWSC (Figure 3.2-18).

The residential area between the DWSC on the west and the Sacramento River to the east are considered by FEMA to be protected from the 1% chance (100-year) flood by levee, dike, or other structures subject to possible failure of overlapping during longer floods.

The Sacramento River on the eastern portion of the map is zoned as AE or Base Flood Elevations have been determined. The toe drain on the west end of the map is also zoned as AE. The DWSC, Lake Washington, and the other unknown pond in the northern portion of the FEMA Map are in Zone A.

3.2.2.2.7 Past Sea-Level Rise in the Program Area

MBK Engineers (2009b) applied the USACE sea-level rise guidance (U.S. Army Corps of Engineers 2009b) to the WSLIP in order to determine the effects of potential sea-level rise on the program area. Since the WSLIP sea-level rise analysis is in support of the pre-existing project design, many of the points in the USACE policy guidance do not apply, particularly those which refer to the comparison of project alternatives. The MBK Engineers (2009b) report uses the procedure for calculating sea-level rise which is identified in the USACE guidance and applies that procedure to the proposed WSLIP design.

Analysis of Historic Mean Sea Level Change

As described in the MBK Engineers report (2009b), the nearest tide station with sufficient period of record (40+ years recommended) is the National Oceanic and Atmospheric Administration (NOAA) station 9414290 at San Francisco, CA. Tidal records for this station have been maintained back to the 1850s.

The NOAA Center for Operational Oceanographic Products and Services (CO-OPS) has analyzed the historic mean sea level for this site has been shown to be increasing at a rate of 2.01mm/yr (California Climate Change Center 2009 as cited in MBK Engineers 2009b). Projections of future mean sea level change are discussed below.

3.2.2.2.8 Modeling of Hydraulic Effects

Three separate modeling efforts have been conducted for the WSLIP.

- In 2009, a modeling effort for the entire proposed program area was conducted by MBK Engineers (MBK Engineers 2009a).
- In 2007, MBK Engineers evaluated a levee setback on the Sacramento River just north of the Pocket area (Tustison pers. comm.).

- In 2009, MBK Engineers evaluated the potential effects of mean sea level change for the program area (MBK Engineers 2009b).

One previous modeling effort has also been used in the analysis of recreational elements for the WSLIP.

- In 2005, MBK Engineers performed a hydraulic analysis of the effects of potential cumulative development in the Sacramento River corridor floodway between Verona and Courtland on flood stages and flows (MBK Engineers 2005). The results are provided herein.

Evaluation of the Effects of the WSLIP

MBK Engineers (2009a) performed a hydraulic effect analysis for the City of West Sacramento to analyze the effects of the WSLIP on flood risk within the study area, both upstream and downstream of the study area.

Overall Modeling Approach

The MBK version of the Sacramento and San Joaquin River Basins Comprehensive Study (Comp Study) Sacramento River UNET model was used to calculate flood profiles and analyze effects. UNET is a one-dimensional unsteady open-channel flow model that was developed, and is supported, by the USACE Hydrologic Engineering Center. The upstream and downstream boundaries of the Comp Study UNET model are shown in Table 3.2-14 below.

Table 3.2-14. Sacramento River UNET Model Boundaries

Boundary Type	River	Location	USGS River Mile	Comp Study River Mile
Upstream	Sacramento River	Hamilton City	219.1	215.5
	Feather River	Thermalito Afterbay Outlet	59.0	58.6
	Yuba River	Below Englebright Dam	–	22.0
	Bear River	Wheatland Gage	–	12.5
	American River	Fair Oaks Gage	–	22.0
Downstream	Sacramento River	At Threemile Slough	9.4	9.5
	Georgiana Slough	At Mokelumne River	–	–

Source: MBK Engineers 2009a.
USGS = U.S. Geological Survey.

Model Assumptions

Table 3.2-15 defines the conditions analyzed and the various modeling assumptions that went with those conditions. As the table shows, an Existing, Without Project (analyzed as the No Action Alternative in the Environmental Consequences section), and a With Project condition were analyzed (analyzed as Flood Control and Recreation Program Alternatives in the Environmental Consequence section below.)

Table 3.2-15. Definition of Model Assumptions for Various Conditions

Condition	Top of Levee Assumption	Levee Failure Assumption	Reservoir Operation Assumption	Additional
Existing	Existing top of levee grade April 2008	No levee failure	Existing reservoirs and current (2008) operation criteria	
Without Project	Same as Existing with the following changes. Federally authorized improvements to Folsom Dam are implemented and urban area levees outside the West Sacramento Basin are assumed to have levees at 1-in-200-year water surface + 3 feet of freeboard. WSLIP levees same as Existing Condition.	No levee failure	Same as Existing except Folsom Dam will be operated in accordance with the Joint Federal Project currently under construction	
With Project	Same as Without Project except WSLIP levees raised to design level (1-in-200-year water surface + 3 feet of freeboard)	No levee failure	Same as Without Project	In-channel erosion protection

Source: MBK Engineers 2009a.

In addition to the project design elements, the water surface profiles developed for this analysis (without project and with project conditions) are based on the following criteria.

- The following components of the Three Rivers Levee Improvement Project are in place:
  - RD 784 Bear River levee setback,
  - RD 784 Western Pacific Interceptor Canal levee raise, and
  - RD 784 Feather River levee setback;
- Levee District 1 Feather River (west) levee setback is in place;
- Natomas Levee Improvement Project is in place; and
- Flood Control Project levees with deficient design freeboard were raised to eliminate the deficiency.

Hydrologic Inputs

USACE, as part of the Comp Study, developed input flows for the Comprehensive Study Sacramento River UNET hydraulic simulation model for the following hypothetical storm centerings (* indicates used in this analysis):

- Sacramento River Mainstem at Latitude of Ord Ferry
- Sacramento River Mainstem at Latitude of Sacramento*
- Stony Creek
- Shasta to Ord Ferry
- Butte Creek
- Feather River at Oroville
- Feather River at Shanghai Bend*

- Yuba River
- Bear River
- American River*
- Cache and Putah Creeks

Modeling Results

Tables 3.2-16, 3.2-17, and 3.2-18 summarize the maximum (or design) water surface elevations at several locations in and around the program area for the Existing, Without Project, and With Project conditions for the 1-in-100-year, 1-in-200-year and 1-in-500-year flood events, respectively.

There are no calculated effects of the WSLIP for the 1-in-100-year and 1-in-200-year flood events. For the 1-in-500-year flood, the maximum water surface elevation change on the Sacramento River between the Without Project and With Project conditions is 2.67 foot (NAVD 88) at RM 59.0 (2.66 is maximum difference for the selected locations in Table 3.2-18). However, even these relatively minor computed effects are considered extremely implausible, given the significant portion of upstream and adjacent levees overtopped (see Table 3.2-19 for quantification of the levee overtopping from this analysis and Appendix A in MBK Engineers [2009a] for analysis where upstream levees are allowed to fail) by this flood without any levee failures occurring.

Table 3.2-16. 1-in-100-Year Maximum Water Surface Elevation Summary, No Levee Failures

	Maximum Water Surface Elevation (feet NAVD 88)			Change (feet)	
Location (Comp Study River Mile)	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
Knight's Landing (90.22)	44.82	44.81	44.81	-0.01	0.00
Fremont Weir, west end (84.75)	42.84	42.80	42.80	-0.04	0.00
Natomas Cross Canal (79.21)	43.65	43.59	43.59	-0.06	0.00
I-5 (71.00)	39.37	39.13	39.13	-0.24	0.00
W. Sacramento city limit (63.44)	35.03	34.49	34.49	-0.54	0.00
American River (60.4)	35.03	34.47	34.47	-0.56	0.00
I St. Bridge (59.695)	34.76	34.20	34.20	-0.56	0.00
Stone Lock (57.86)	34.04	33.49	33.49	-0.55	0.00
Linden Road (56)	33.15	32.63	32.63	-0.52	0.00
Davis Road (54.75)	32.73	32.20	32.20	-0.53	0.00
W. Sacramento city limit (51.75)	31.1	30.6	30.6	-0.50	0.00
Freeport Bridge (46.432)	28.47	28.02	28.02	-0.45	0.00
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	34.53	33.97	33.97	-0.56	0.00
Yolo Bypass east levee (0.56)	32.57	32.35	32.35	-0.22	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	32.13	31.97	31.97	-0.16	0.00
SPRR Bridge (43.24)	31.54	31.38	31.38	-0.16	0.00
Interstate 80 (42.96)	31.44	31.28	31.28	-0.16	0.00

Location (Comp Study River Mile)	Maximum Water Surface Elevation (feet NAVD 88) Existing	Without Project	With Project	Change (feet) Existing to Without Project	Without Project to With Project
Navigation Levee north end (41.65)	31.12	30.96	30.96	-0.16	0.00
W. Sacramento city limit (38.46)	29.53	29.39	29.39	-0.14	0.00
Lisbon Gage (36.2)	28.52	28.39	28.39	-0.13	0.00
Babel Slough (34.02)	27.52	27.40	27.40	-0.12	0.00
Clarksburg Road (31.89)	26.38	26.26	26.26	-0.12	0.00
Hamilton Road (29.42)	24.03	23.90	23.90	-0.13	0.00
Port of Sacramento					
SA 236	18.79	18.71	18.71	-0.08	0.00
Sacramento Deep Water Ship Channel					
Marshall Road (40.72)	18.79	18.71	18.71	-0.08	0.00
W. Sacramento city limit (38.46)	18.79	18.71	18.71	-0.08	0.00

Source: MBK Engineers 2009a.

Table 3.2-17. 1-in-200-Year Maximum Water Surface Elevation Summary, No Levee Failures

Location (Comp Study River Mile)	Maximum Water Surface Elevation (feet NAVD 88) Existing	Without Project	With Project	Change (feet) Existing to Without Project	Without Project to With Project
Sacramento River					
Knight's Landing (90.22)	45.71	45.71	45.71	0.00	0.00
Fremont Weir, west end (84.75)	44.36	44.35	44.35	-0.01	0.00
Natomas Cross Canal (79.21)	45.15	45.14	45.14	-0.01	0.00
I-5 (71.00)	40.83	40.55	40.55	-0.28	0.00
W. Sacramento city limit (63.44)	37.42	36.51	36.51	-0.91	0.00
American River (60.4)	38.16	36.58	36.58	-1.58	0.00
I St. Bridge (59.695)	37.86	36.30	36.30	-1.56	0.00
Stone Lock (57.86)	37.11	35.58	35.58	-1.53	0.00
Linden Road (56)	36.12	34.66	34.66	-1.46	0.00
Davis Road (54.75)	35.69	34.24	34.24	-1.45	0.00
W. Sacramento city limit (51.75)	33.91	32.57	32.57	-1.34	0.00
Freeport Bridge (46.432)	31.02	29.89	29.89	-1.13	0.00
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	37.20	36.07	36.07	-1.20	0.00
Yolo Bypass east levee (0.56)	34.18	33.90	33.90	-0.28	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	33.50	33.39	33.39	-0.11	0.00
SPRR Bridge (43.24)	32.89	32.79	32.79	-0.10	0.00
Interstate 80 (42.96)	32.77	32.67	32.67	-0.10	0.00
Navigation Levee north end (41.65)	32.43	32.33	32.33	-0.10	0.00

Location (Comp Study River Mile)	Maximum Water Surface Elevation (feet NAVD 88) Existing	Without Project	With Project	Change (feet) Existing to Without Project	Without Project to With Project
W. Sacramento city limit (38.46)	30.80	30.17	30.17	-0.09	0.00
Lisbon Gage (36.2)	29.76	29.67	29.67	-0.09	0.00
Babel Slough (34.02)	28.79	28.69	28.69	-0.10	0.00
Clarksburg Road (31.89)	27.65	27.56	27.56	-0.09	0.00
Hamilton Road (29.42)	25.46	25.35	25.35	-0.11	0.00
Port of Sacramento					
SA 236	20.21	20.10	20.10	-0.11	0.00
Sacramento Deep Water Ship Channel					
Marshall Road (40.72)	20.21	20.10	20.10	-0.11	0.00
W. Sacramento city limit (38.46)	20.21	20.10	20.10	-0.11	0.00

Source: MBK Engineers 2009a.

Table 3.2-18. 1-in-500-Year Maximum Water Surface Elevation Summary, No Levee Failures

Location (Comp Study River Mile)	Maximum Water Surface Elevation (feet NAVD 88) Existing	Without Project	With Project	Change (feet) Existing to Without Project	Without Project to With Project
Sacramento River					
Knight's Landing (90.22)	46.37	46.44	46.45	+0.07	+0.01
Fremont Weir, west end (84.75)	45.50	45.66	45.66	+0.16	0.00
Natomas Cross Canal (79.21)	45.93	46.12	46.12	+0.19	0.00
I-5 (71.00)	41.80	41.87	41.89	+0.07	+0.02
W. Sacramento city limit (63.44)	38.78	38.79	38.83	+0.01	+0.04
American River (60.4)	39.79	39.82	39.89	+0.03	+0.07
I St. Bridge (59.695)	39.43	39.47	39.56	+0.04	+0.09
Stone Lock (57.86)	38.63	38.72	38.78	+0.09	+0.06
Linden Road (56)	37.47	37.61	37.66	+0.14	+0.05
Davis Road (54.75)	37.0	37.16	37.21	+0.16	+0.05
W. Sacramento city limit (51.75)	35.14	35.21	35.25	+0.10	+0.04
Freeport Bridge (46.432)	32.04	32.10	32.13	+0.06	+0.03
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	38.74	38.73	38.78	-0.01	+0.05
Yolo Bypass east levee (0.56)	35.41	35.69	35.73	+0.28	+0.01
Yolo Bypass					
W. Sacramento city limit (44.6)	34.87	35.16	35.16	+0.29	0.00
SPRR Bridge (43.24)	34.26	34.55	34.56	+0.29	+0.01
Interstate 80 (42.96)	34.08	34.35	34.36	+0.27	+0.01
Navigation Levee north end (41.65)	33.711	33.98	33.98	+0.27	0.00
W. Sacramento city limit (38.46)	32.08	32.33	32.33	+0.25	0.00

Location (Comp Study River Mile)	Maximum Water Surface Elevation (feet NAVD 88)			Change (feet)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Lisbon Gage (36.2)	31.02	31.26	31.26	+0.24	0.00
Babel Slough (34.02)	30.09	30.32	3	+0.23	+0.01
Clarksburg Road (31.89)	28.97	29.21	29.21	+0.24	0.00
Hamilton Road (29.42)	36.89	27.14	27.14	+0.25	0.00
Port of Sacramento					
SA 236	21.52	21.78	21.78	+0.26	0.00
Sacramento Deep Water Ship Channel					
Marshall Road (40.72)	21.52	21.78	21.78	+0.26	0.00
W. Sacramento city limit (38.46)	21.52	21.78	21.77	+0.26	-0.01

Source: MBK Engineers 2009a.

Table 3.2-19. Extent of Levee Overtopping, 1-in-500-Year Flood Event, No Failures (all values approximate)

Location	Total Length of Levee 1 (miles)	Simulated Length of Overtopped Levee 1, 2 (miles)		
		Existing	Without Project	With Project
American River	24	13	12	12
Feather River	105	11	12	12
Natomas Cross Canal	10	4	0	0
Sacramento Bypass	4	0.2	0.3	0.3
Sacramento River upstream of Natomas Cross Canal	180	1	1	1
Sacramento River Adjacent to Natomas	36	7	6	6
Sacramento River downstream of American River	120	1	1	1
Sutter Bypass	60	2	1	1
Tisdale Bypass	8	0.3	0.3	0.3
Wadsworth Canal	9	1	1	1
Yolo Bypass	70	5	4	4

Source: MBK Engineers 2009a.

[1] Lengths represent both right and left banks combined.

[2] Results displayed are for the Sacramento River storm centering.

Computed water surface elevation profiles for each key flow condition in the project area are shown in Figures 3.2-19 through 3.2-30[10].

[10] Figures 3.2-19 through 3.2-22 show the water surface elevation profiles of the 1-in-100-year flood; Figures 3.2-23 through 3.2-26 show the water surface elevation profiles of the 1-in-200-year flood; Figures 3.2-27 through 3.2-30 show the profiles for the 1-in-500-year flood.

Evaluation of the Effects of Sacramento River West Levee Setback at Oak Hall Bend

A proposed levee setback on the Sacramento River South Levee just north of the Pocket Area was evaluated by MBK Engineers (Tustison pers. comm.). This treatment has the most significant implications for hydraulic effects on the Sacramento River South Levee. This setback was aligned such that it cut off an oxbow feature in the Sacramento River, creating a more direct and wider route for water to flow downstream. Figure 1 of Tustison pers. comm. shows a map of the location of this levee setback on the Sacramento River South Levee.

Overall Modeling Approach

The MBK version of the Comprehensive Study Sacramento River UNET model adopted for the Lower Sacramento River Regional Plan was used to calculate flood profiles. UNET is a one-dimensional unsteady open-channel flow model that was developed, and is supported, by the USACE Hydrologic Engineering Center. The downstream boundary of the Comp Study UNET model is the Sacramento River at Collinsville, and the upstream boundaries on the major rivers are listed below.

- Sacramento River Woodson Bridge (RM 215.5)
- Feather River Thermalito Afterbay Outlet (RM 58.6)
- Yuba River Englebright Reservoir (RM 22.0)
- Bear River Wheatland Gage (RM 12.5)
- American River Fair Oaks Gage (RM 22.0)

The topographic information in the model was developed by USACE in 1998.

Model Assumptions

The following primary assumptions were used in the analysis:

- existing physical conditions,
- levees throughout the Sacramento River system overtop without failure, and
- Federal levees deficient of 1957 design were raised to comply with 1957 design top of levee.

Setback Information

The levee setback was modeled by moving the existing Sacramento River West Levee laterally by the appropriate setback distance as calculated via the setback levee alignment (See Figure 1 of Tustison pers. comm.) from HDR, Inc. The setback affects seven model cross sections between Comprehensive Study RMs 54.75 and 53.25 (USGS RMs 54.4 and 52.9). Figures 2a–2g of Tustison pers. comm., included in the appendix, show these cross sections under existing conditions and with the proposed setback levee. It is unknown what the eventual land use of the setback area will be; therefore, MBK Engineers used a relatively high roughness value of n=0.10 in the setback area (a value of n=0.03 was used in the without project condition for the right overbank in this reach).

Modeling Results

The hydraulic analysis was performed with the Comp Study Sacramento River at Sacramento hydrologic centering, the predominant centering for this reach, for the 1-in-100 AEP and 1-in-200 AEP flood events. The American River at Folsom Dam outflow was modified so that the peak flow

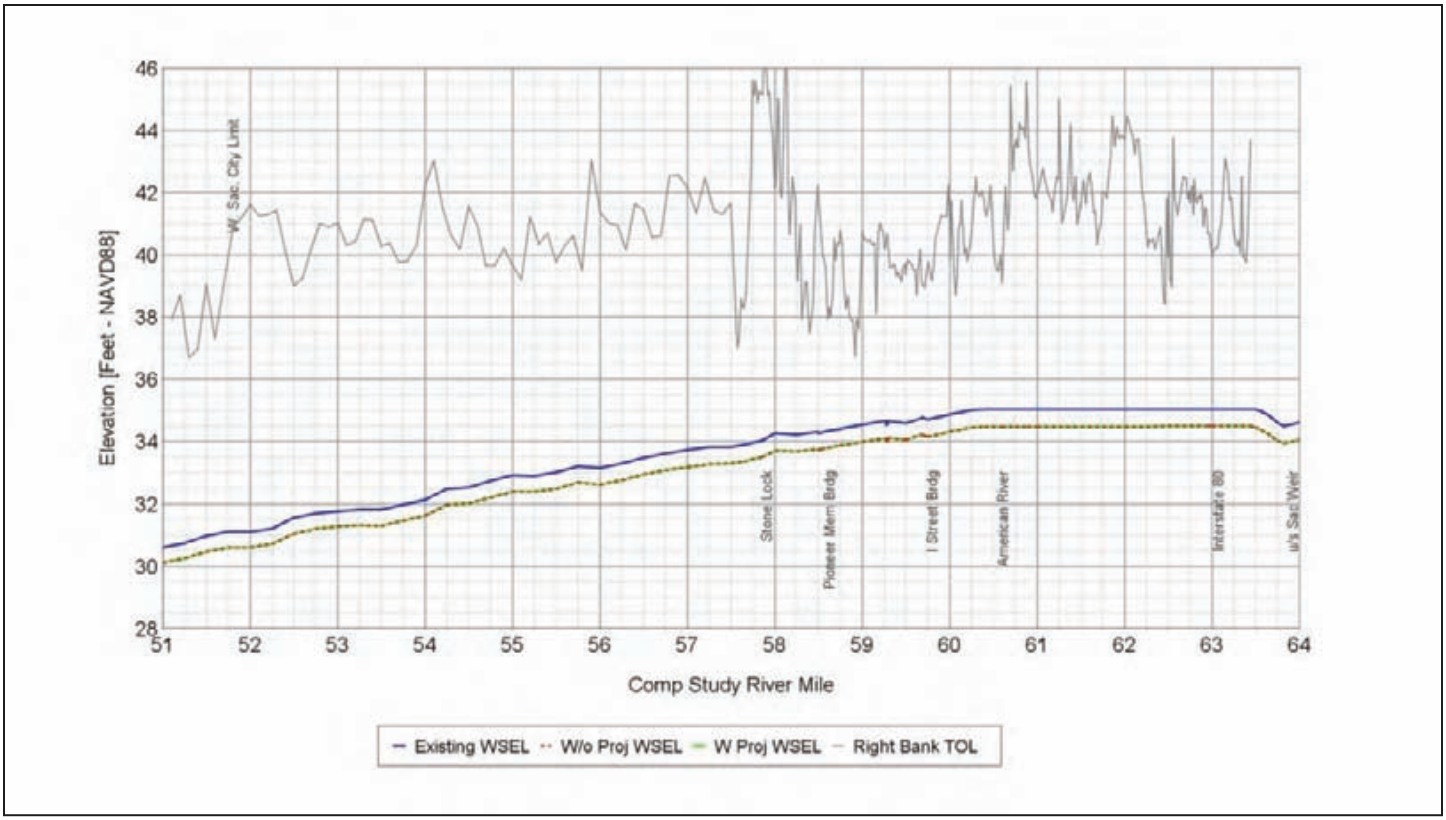
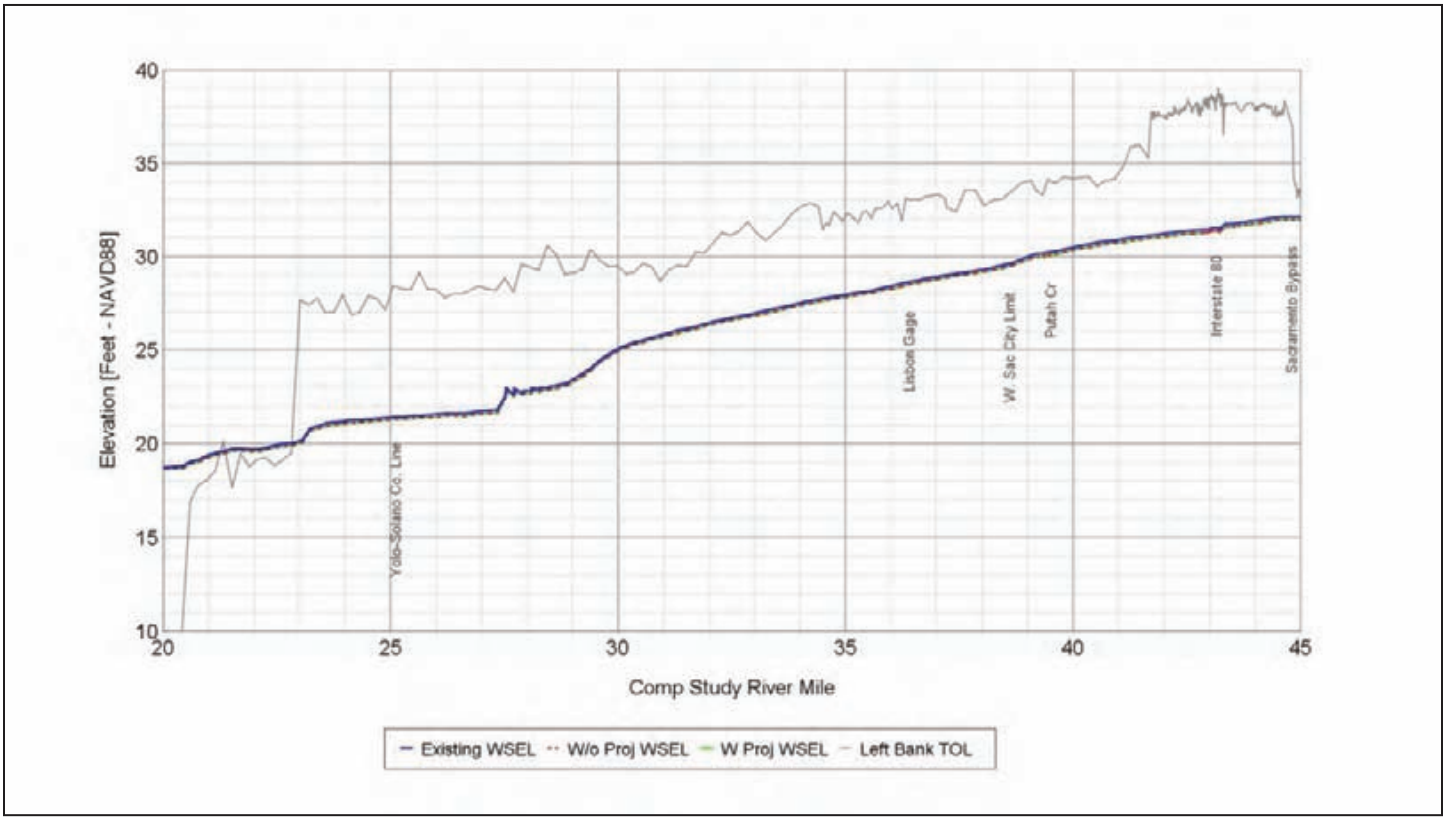


Figure 3.2-19
Comparison of 1-in-100 Year Water Surface Profiles - Sacramento River



Source: MBK Engineers, June 2009

Figure 3.2-20
Comparison of 1-in-100 Year Water Surface Profiles - Yolo Bypass

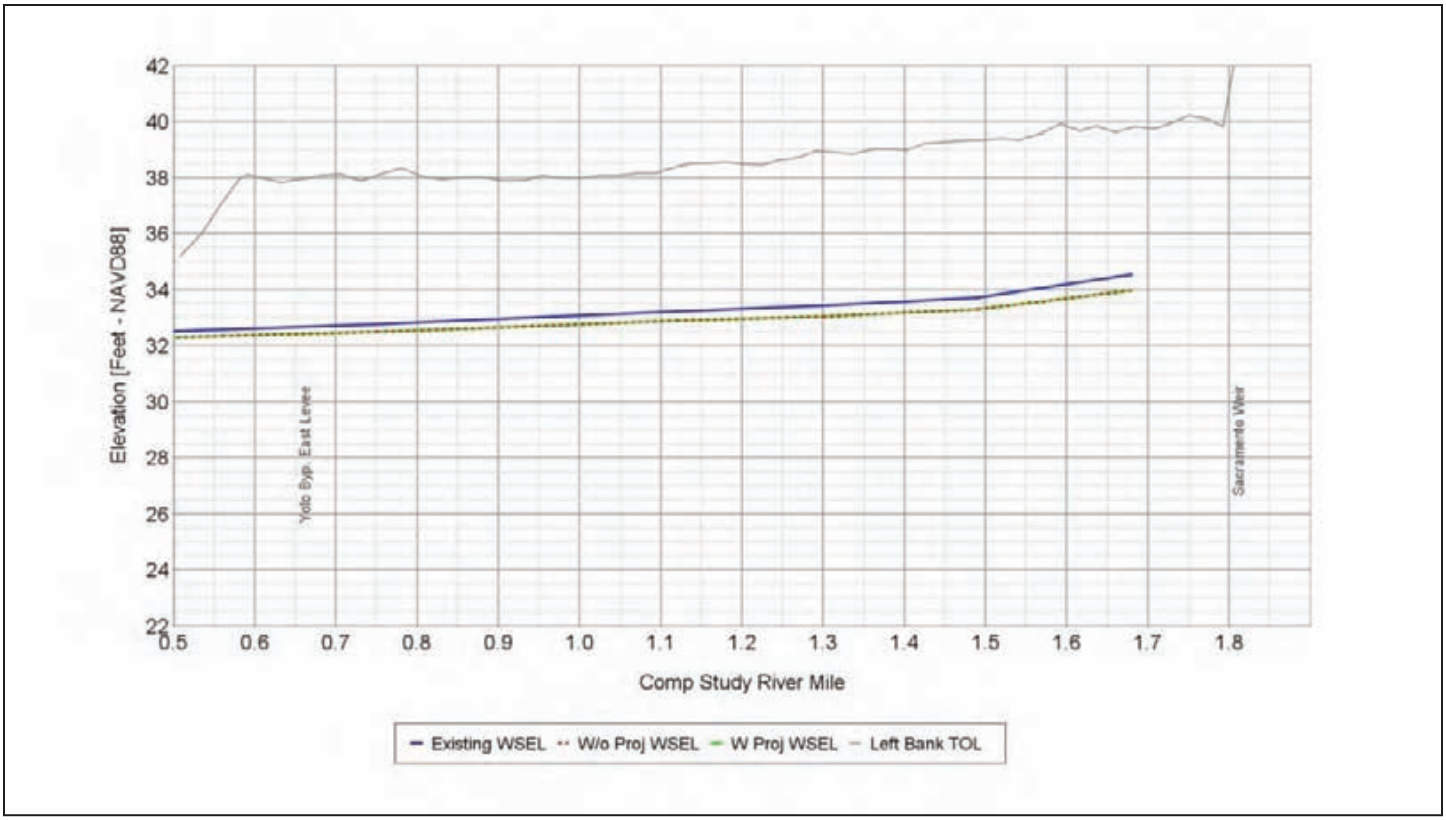
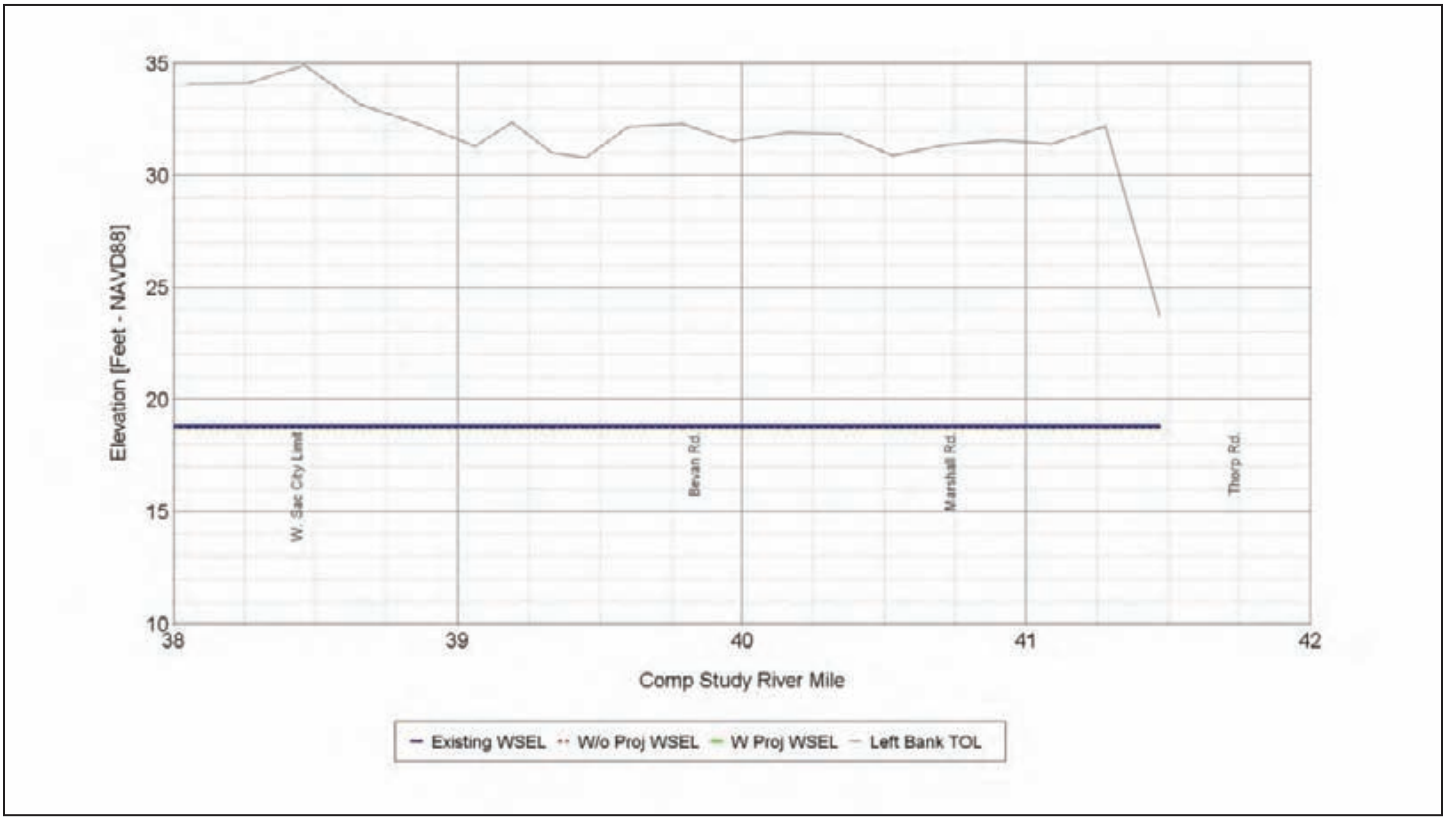


Figure 3.2-21
Comparison of 1-in-100 Year Water Surface Profiles - Sacramento Bypass



Source: MBK Engineers, June 2009

Figure 3.2-22
Comparison of 1-in-100 Year Water Surface Profiles - Sacramento Ship Channel

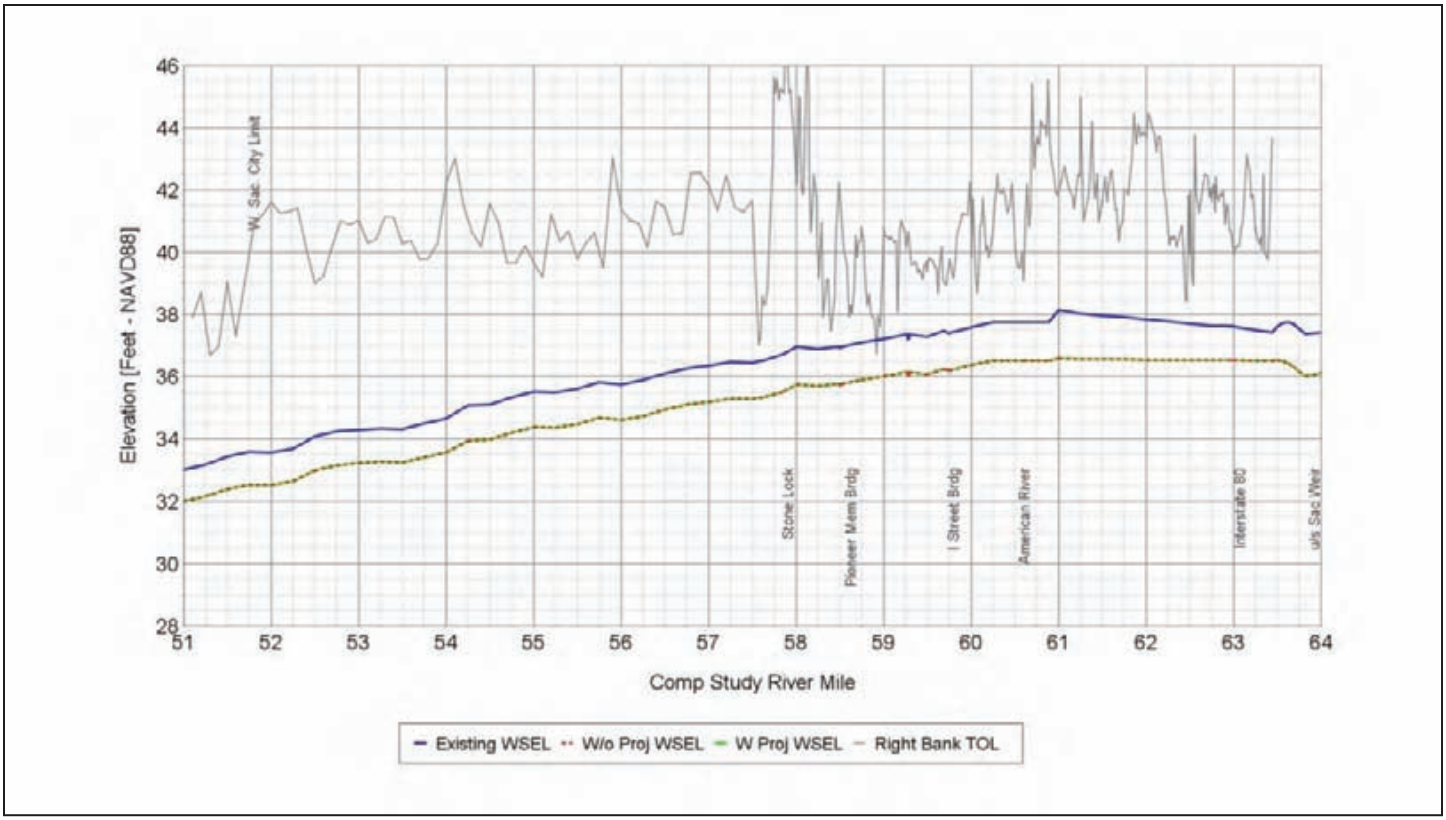
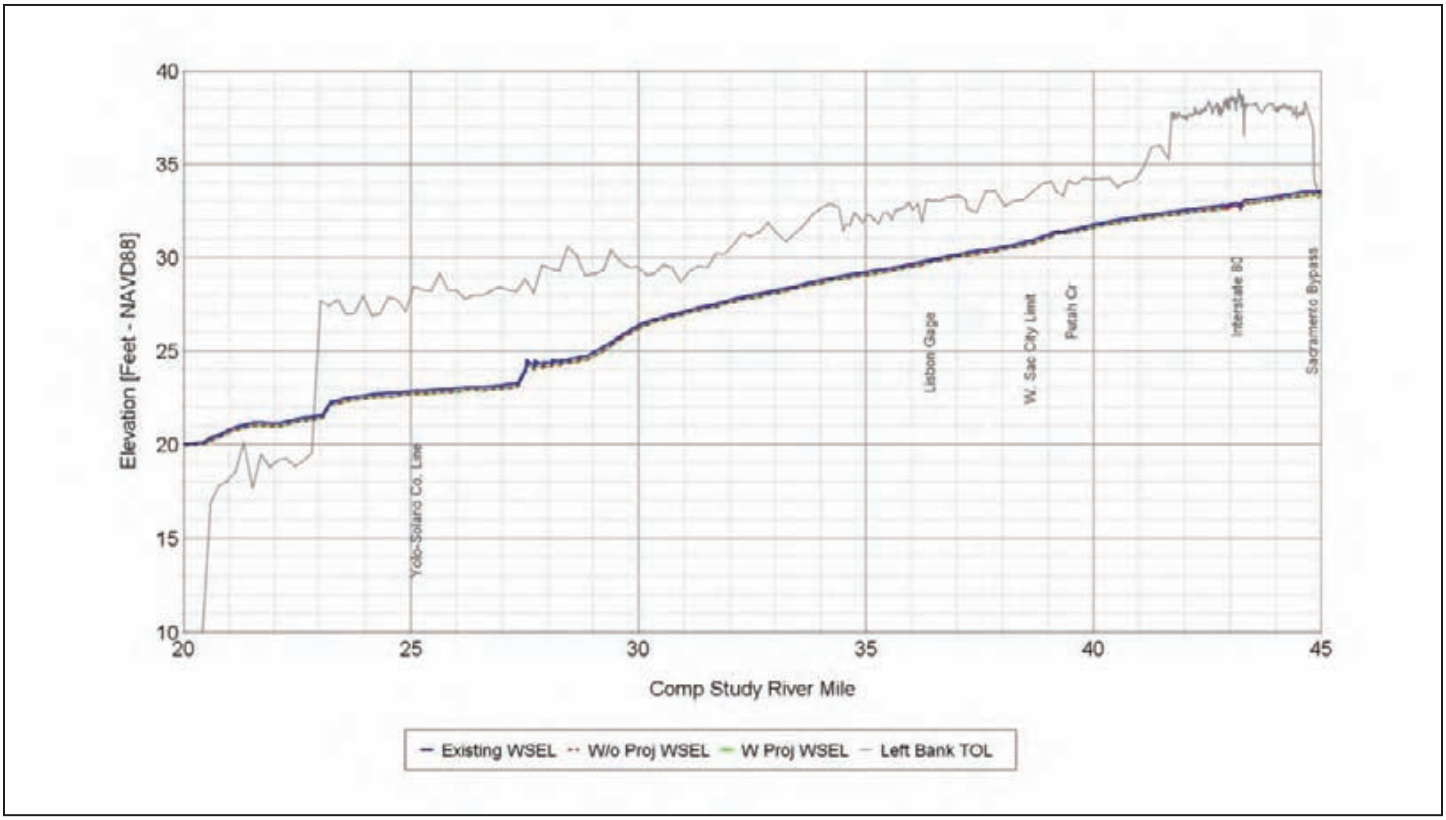


Figure 3.2-23
Comparison of 1-in-200 Year Water Surface Profiles - Sacramento River



Source: MBK Engineers, June 2009

Figure 3.2-24
Comparison of 1-in-200 Year Water Surface Profiles - Yolo Bypass

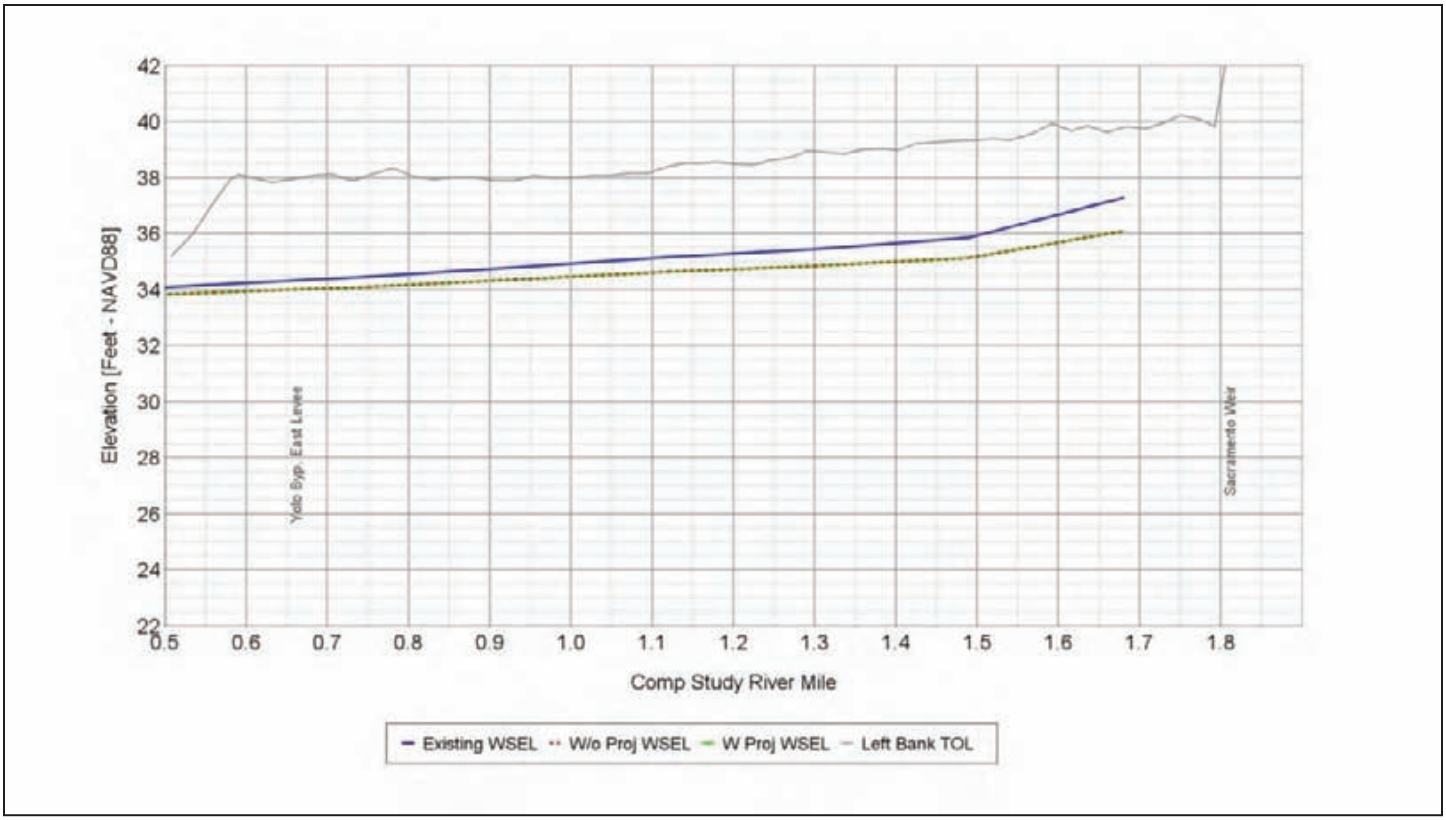
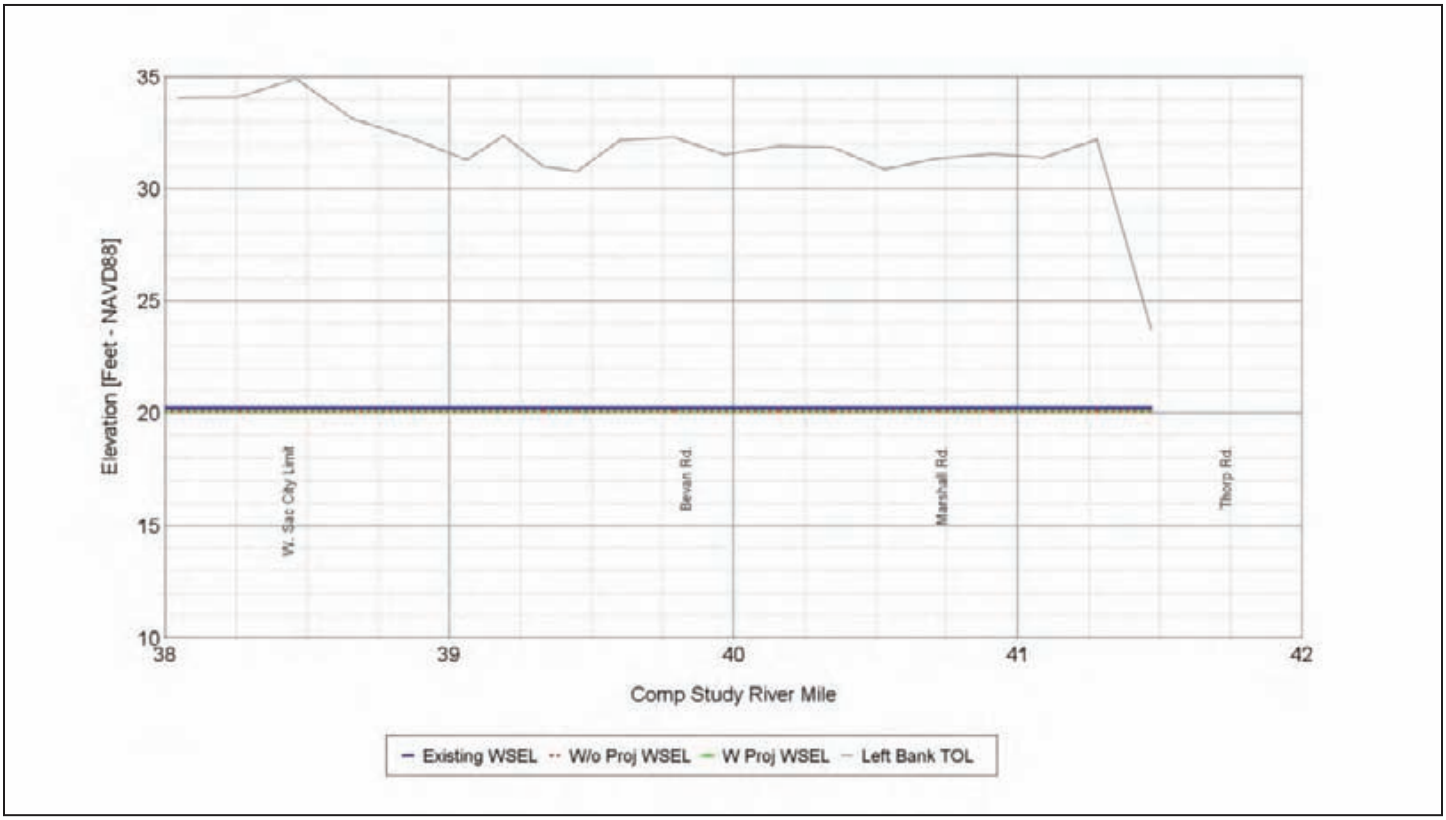


Figure 3.2-25
Comparison of 1-in-200 Year Water Surface Profiles - Sacramento Bypass



Source: MBK Engineers, June 2009

Figure 3.2-26
Comparison of 1-in-200 Year Water Surface Profiles - Sacramento Ship Channel

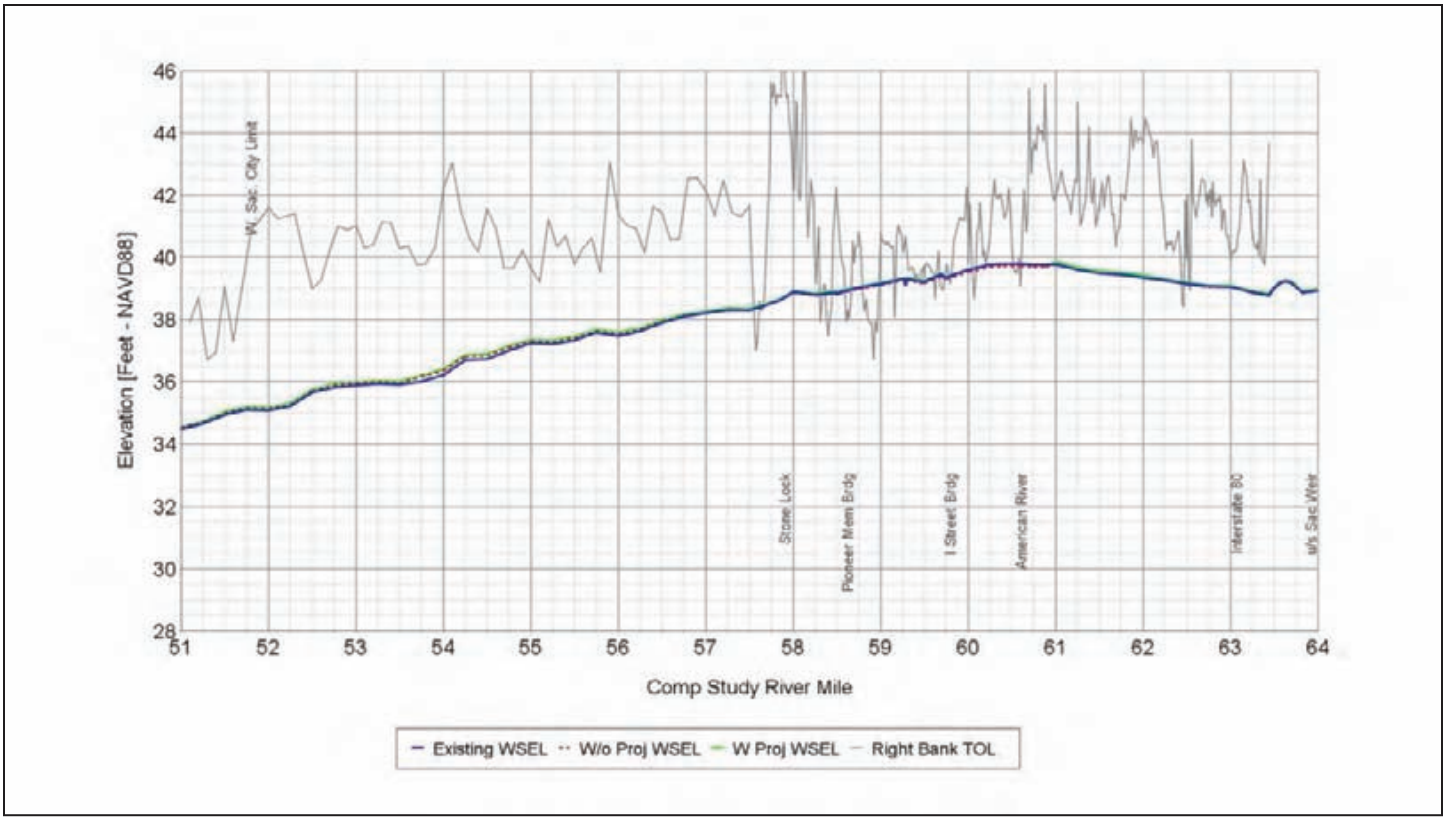
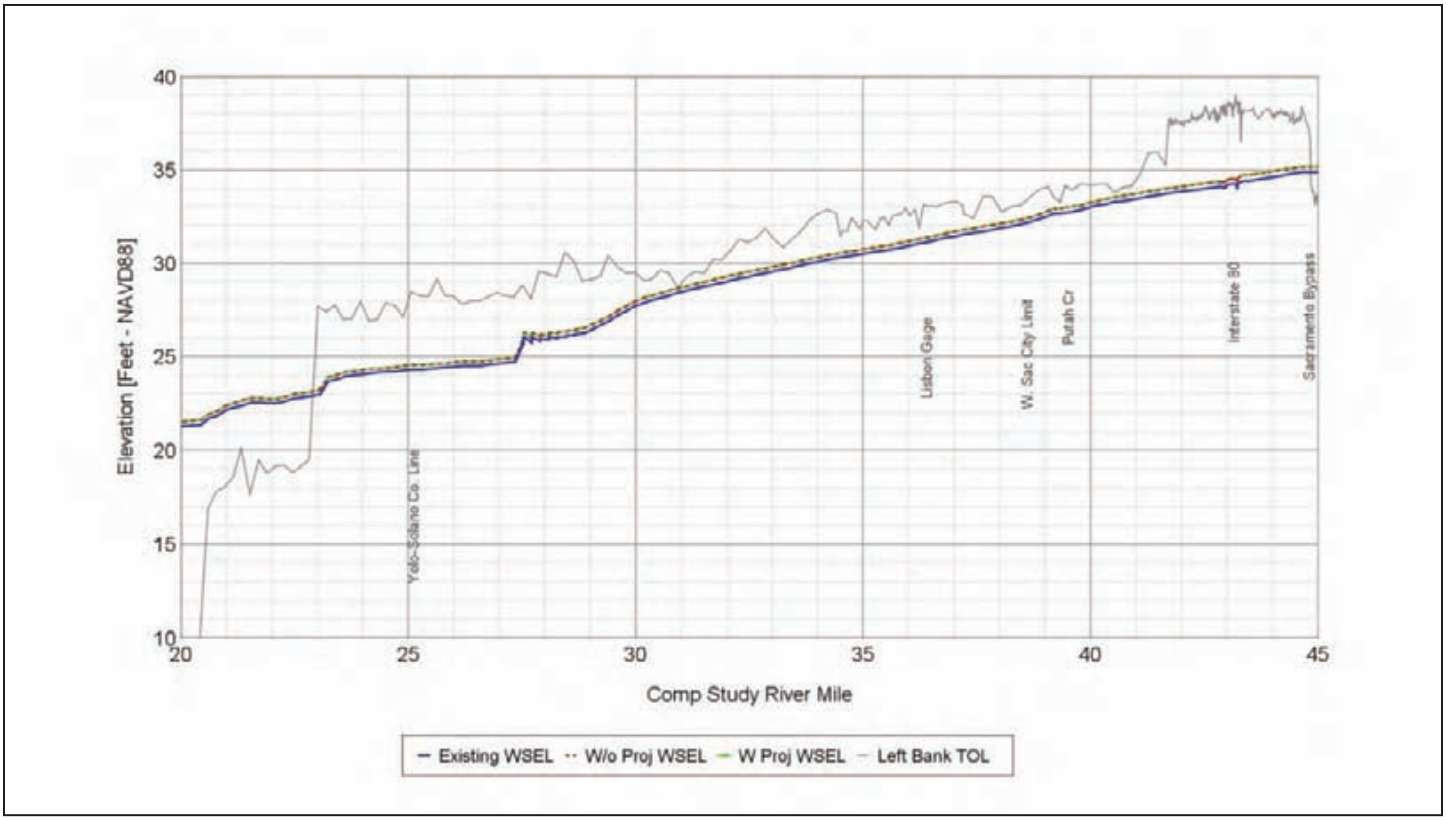


Figure 3.2-27
Comparison of 1-in-500 Year Water Surface Profiles - Sacramento River



Source: MBK Engineers, June 2009

Figure 3.2-28
Comparison of 1-in-500 Year Water Surface Profiles - Yolo Bypass

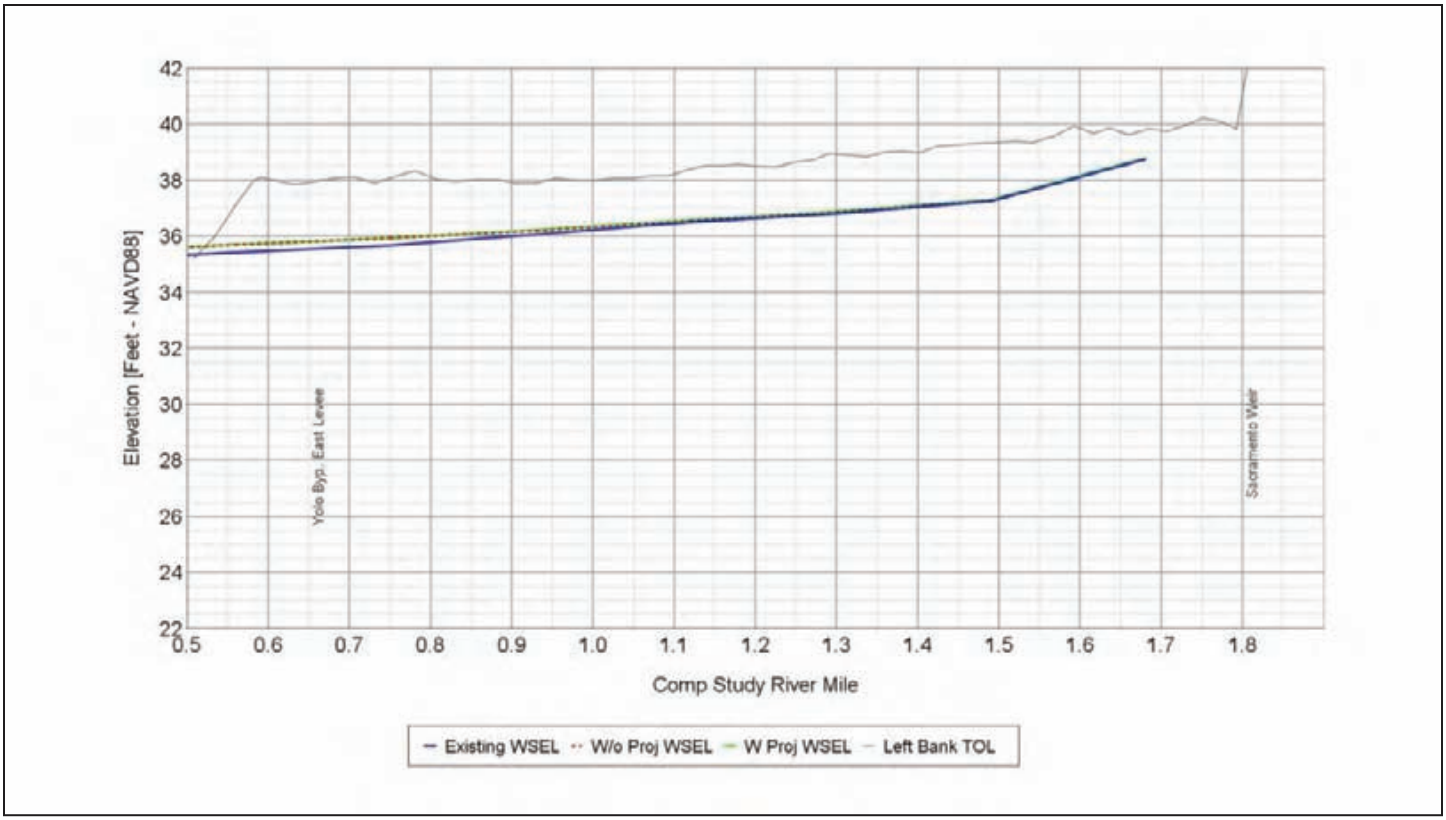
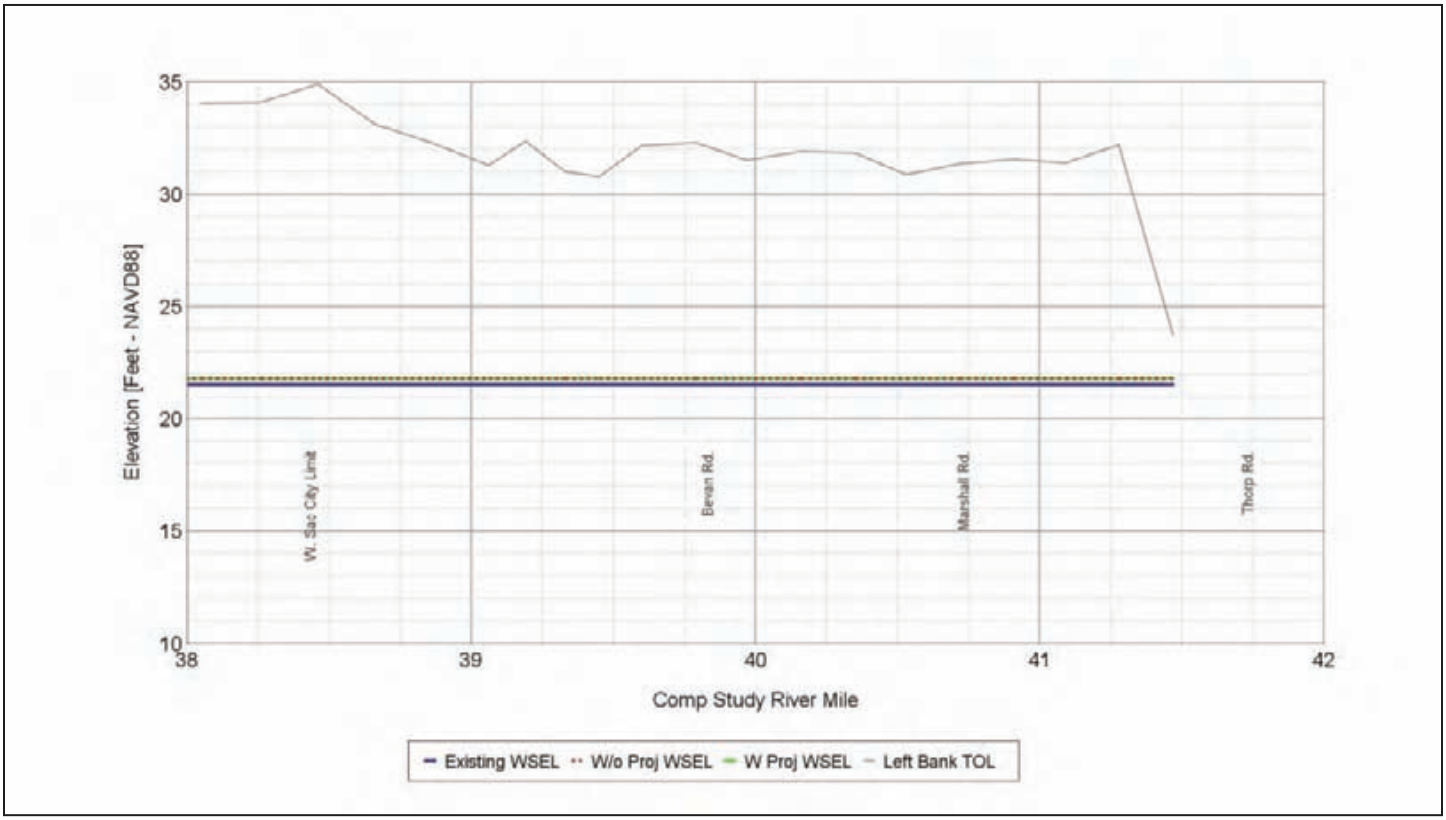


Figure 3.2-29
Comparison of 1-in-500 Year Water Surface Profiles – Sacramento Bypass



Source: MBK Engineers, June 2009

Figure 3.2-30
Comparison of 1-in-500 Year Water Surface Profiles – Sacramento Ship Channel

was 145,000 cfs in the 1-in-100 AEP event and 160,000 cfs in the 1-in-200 AEP event. The hydrographs were obtained from the most recent (August 2006) Folsom Dam operational data from USACE.

The peak water surface elevation profiles with and without the levee setback are presented in Figure 3 of Tustison pers. comm. Tables 3.2-20a and 3.2-20b show the maximum modeled flow rates at several key locations for the 1-in-100 AEP and 1-in-200 AEP flood events, respectively. Tables 3.2-21a and 3.2-21b give the maximum water surface elevation values at the same key locations.

As the figure and tables show, the setback levee generally decreases the water surface upstream of the setback, while areas downstream see slightly higher water surfaces (as well as an increase in flow). The slight decrease in the water surface elevation at and upstream of the setback levee (associated with the increased floodplain capacity) results in a slight increase in the flow in the Sacramento River downstream of the American River with a corresponding decrease in the flow across the Sacramento Weir. The increased stage downstream of the setback is the result of this flow increase (Tustison pers. comm.).

Table 3.2-20a. 1-in-100 AEP Peak Flow (cfs) at Key Locations

Location	Without Project	With Setback	Difference (Setback w/o Project)
Sacramento River			
Verona Gage (RM 78.75)	113,200	113,300	100
Business 80 (RM 58.52)	134,100	136,300	2,200
Upstream End of Setback (RM 54.75)	133,900	136,100	2,200
Downstream End of Setback (RM 53.25)	133,900	135,900	2,000
Garcia Bend (RM 51.25)	133,800	135,800	2,000
Freeport Gage (RM 46.25)	133,500	135,500	2,000
Steamboat Slough (RM 32.70)	100,800	102,100	1,300
Cache Slough (RM 14.62)	49,000	49,700	700
American River			
Howe Ave (RM 7.62)	144,900	144,900	0
Capital City Freeway (RM 3.90)	144,700	144,700	0
Interstate 5 (RM 0.27)	126,900	126,800	-100
Yolo Bypass			
Woodland Gage (RM 51.10)	421,600	421,400	-200
U/S Sacramento Bypass (RM 45.02)	421,800	421,600	-200
Lisbon Gage(RM 36.20)	540,700	538,700	-2,000

Source: Tustison pers. comm..

Table 3.2-20b. 1-in-200 AEP Peak Flow (cfs) at Key Locations

Location	Without Project	With Setback	Difference (Setback w/o Project)
Sacramento River			
Verona Gage (RM 78.75)	132,400	132,500	100
Business 80 (RM 58.52)	141,800	144,200	2,400
Upstream End of Setback (RM 54.75)	141,600	144,000	2,400
Downstream End of Setback (RM 53.25)	141,600	143,900	2,300
Garcia Bend (RM 51.25)	141,500	143,800	2,300
Freeport Gage (RM 46.25)	141,300	143,600	2,300
Steamboat Slough (RM 32.70)	107,800	109,200	1,400
Cache Slough (RM 14.62)	52,000	52,600	600
American River			
Howe Ave (RM 7.62)	160,000	160,000	0
Capital City Freeway (RM 3.90)	159,900	159,900	0
Interstate 5 (RM 0.27)	140,600	140,500	-100
Yolo Bypass			
Woodland Gage (RM 51.10)	481,700	481,700	0
U/S Sacramento Bypass (RM 45.02)	480,300	480,300	0
Lisbon Gage (RM 36.20)	621,400	619,500	-1,900

Source: Tustison pers. comm..

Table 3.2-21a. 1-in-100 AEP Peak Water Surface Elevation (ft-NAVD 88) at Key Locations

Location	Without Project	With Setback	Difference (Setback w/o Project)
Sacramento River			
Verona Gage (RM 78.75)	43.44	43.43	-0.01
Business 80 (RM 58.52)	34.29	34.17	-0.12
Upstream End of Setback (RM 54.75)	32.74	32.61	-0.13
Downstream End of Setback (RM 53.25)	31.82	32.16	0.34
Garcia Bend (RM 51.25)	30.72	30.99	0.27
Freeport Gage (RM 46.25)	28.29	28.54	0.25
Steamboat Slough (RM 32.70)	20.97	21.12	0.15
Cache Slough (RM 14.62)	12.70	12.70	0.00
American River			
Howe Ave (RM 7.62)	48075	48.74	-0.01
Capital City Freeway (RM 3.90)	40.27	40.23	-0.04
Interstate 5 (RM 0.27)	35.26	35.17	-0.09
Yolo Bypass			
Woodland Gage (RM 51.10)	35.64	35.62	-0.02
U/S Sacramento Bypass (RM 45.02)	31.96	31.93	-0.03
Lisbon Gage (RM 36.20)	28.35	28.32	-0.03

Source: Tustison pers. comm..

Table 3.2-21b. 1-in-200 AEP Peak Water Surface Elevation (ft-NGVD) at Key Locations

Location	Without Project	With Setback	Difference (Setback w/o Project)
Sacramento River			
Verona Gage (RM 78.75)	44.82	44.81	-0.01
Business 80 (RM 58.52)	35.65	35.53	-0.12
Upstream End of Setback (RM 54.75)	34.11	33.98	-0.13
Downstream End of Setback (RM 53.25)	33.17	33.55	0.38
Garcia Bend (RM 51.25)	32.07	32.36	0.29
Freeport Gage (RM 46.25)	29.63	29.89	0.26
Steamboat Slough (RM 32.70)	22.17	22.32	0.15
Cache Slough (RM 14.62)	13.58	13.59	0.01
American River			
Howe Ave (RM 7.62)	50.23	50.22	-0.01
Capital City Freeway (RM 3.90)	41.71	41.66	-0.05
Interstate 5 (RM 0.27)	36.65	36.56	-0.09
Yolo Bypass			
Woodland Gage (RM 51.10)	36.91	36.89	-0.02
U/S Sacramento Bypass (RM 45.02)	33.18	33.16	-0.02
Lisbon Gage (RM 36.20)	29.47	29.45	-0.02

Source: Tustison pers. comm..

Projections of Future Mean Sea Level Change

As discussed above, MBK Engineers (2009b) applied the USACE sea-level rise guidance (U.S. Army Corps of Engineers 2009b) to the WSLIP in order to determine the effects of potential sea-level rise on the program area.

As specified in the USACE policy, three future mean sea level trends were calculated for the program area. These are:

- Low—using historic trend of mean sea level change;
- Intermediate—considering most recent IPCC and NRC Curve I projections of mean sea level change;
- High—considering NRC Curve III projections of mean sea level change.

Table 3.2-22 shows the results of applying the rates and relationships for 25, 50, and 100 years after the project is constructed. For the calculations, a project construction year of 2012 was assumed (MBK Engineers 2009b).

Table 3.2-22. Calculated Sea-Level Rise for 25, 50, and 100 Years after Project Construction using Intermediate and High Rates of Sea-Level Rise

Years after Project Constructed	Calculated Sea-Level Rise (feet)		
	Low Rate	Intermediate Rate	High Rate
25	0.16	0.30	0.79
50	0.33	0.69	1.97
100	0.66	1.74	5.58

Source: MBK Engineers 2009b.

Hydraulic model simulations were developed to evaluate hydraulic impacts on the WSLIP design of low, intermediate, and high rates of sea-level change 25, 50 and 100 years, respectively, from the project construction date. The Sacramento River UNET Hydraulic Model was used for this purpose, as well as to analyze the WSLIP design, as described above. The same model parameters were used for both analyses.

The results of the hydraulic simulations are shown in Table 3.2-23. This table lists the changes in the maximum (peak) water surface elevations for the WSLIP design simulations under the specified sea-level rise scenarios at various points through the flood system. The sea-level rise scenario results are compared with the WSLIP design (no sea-level rise).

Table 3.2-23. Impacts of Sea Level Rise on the Maximum Water Surface Elevations (WSE) at Locations on the Sacramento River

Location	Existing Condition WSE [ft-NAVD88]	WSE for given Scenario [ft-NAVD88]									WSE for Given Scenario Minus Existing Condition WSE [ft-NAVD88]								
		Low Rate			Intermediate Rate			High Rate			Low Rate			Intermediate Rate			High Rate		
		25yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr
Sacramento River																			
Knight's Landing (90.22)	45.97	45.96	45.96	45.96	45.97	45.96	45.97	45.97	45.97	45.98	-0.01	-0.01	-0.01	0.00	-0.01	0.00	0.00	0.00	+0.01
Fremont Weir, west end (84.75)	45.07	45.05	45.05	45.05	45.07	45.05	45.07	45.07	45.07	45.07	-0.02	-0.02	-0.02	0.00	-0.02	0.00	0.00	0.00	0.00
Natomas Cross Canal (79.21)	45.51	45.50	45.50	45.50	45.51	45.50	45.51	45.51	45.51	45.51	-0.01	-0.01	-0.01	0.00	-0.01	0.00	0.00	0.00	0.00
Interstate-5 (71.00)	40.83	40.83	40.83	40.83	40.83	40.83	40.84	40.83	40.84	40.86	0.00	0.00	0.00	0.00	0.00	+0.01	0.00	+0.01	+0.03
West Sacramento city limit (63.44)	36.61	36.61	36.61	36.61	36.61	36.61	36.62	36.61	36.62	36.69	0.00	+0.01	+0.01	+0.01	+0.01	+0.02	+0.01	+0.02	+0.08
American River (60.4)	36.67	36.68	36.68	36.68	36.68	36.68	36.70	36.68	36.70	36.76	+0.01	+0.01	+0.01	+0.01	+0.01	+0.03	+0.01	+0.03	+0.09
I Street Bridge (59.695)	36.39	36.40	36.40	36.40	36.40	36.40	36.41	36.40	36.42	36.48	+0.01	+0.01	+0.01	+0.01	+0.01	+0.02	+0.01	+0.03	+0.09
Stone Lock (57.86)	35.68	35.68	35.69	35.69	35.69	35.69	35.71	35.69	35.71	35.79	0.00	+0.01	+0.01	+0.01	+0.01	+0.03	+0.01	+0.03	+0.11
Linden Road (56)	34.76	34.77	34.77	34.78	34.77	34.78	34.80	34.78	34.80	34.89	+0.01	+0.01	+0.02	+0.01	+0.02	+0.04	+0.02	+0.04	+0.13
Davis Road (54.75)	34.35	34.34	34.34	34.35	34.34	34.35	34.39	34.35	34.39	34.49	+0.01	+0.01	+0.02	+0.01	+0.02	+0.04	+0.02	+0.04	+0.14
West Sacramento city limit (51.75)	32.69	32.70	32.71	32.72	32.70	32.72	32.75	32.72	32.75	32.89	+0.01	+0.02	+0.03	+0.01	+0.03	+0.06	+0.03	+0.06	+0.20
Freeport Bridge (46.432)	30.02	30.04	30.05	30.06	30.04	30.06	30.11	30.06	30.12	30.32	+0.02	+0.03	+0.04	+0.02	+0.04	+0.09	+0.04	+0.10	+0.30
Walnut Grove Gage (26.75)	19.23	19.28	19.31	19.36	19.31	19.36	19.54	19.38	19.58	20.38	+0.05	+0.08	+0.13	+0.08	+0.13	+0.31	+0.15	+0.35	+1.15
Rio Vista Gage (12.88)	12.78	12.95	13.04	13.20	13.02	13.21	13.75	13.26	13.88	16.01	+0.17	+0.26	+0.42	+0.24	+0.43	+0.97	+0.48	+1.10	+3.23
Three Mile Slough (9.5)	10.23	10.49	10.61	10.84	10.59	10.86	11.62	10.93	11.80	14.58	+0.26	+0.38	+0.61	+0.36	+0.63	+1.39	+0.70	+1.57	+4.35
Collinsville (0.84)	7.61	7.77	7.94	8.27	7.91	8.30	9.35	8.40	9.58	13.19	+0.16	+0.33	+0.66	+0.30	+0.69	+1.74	+0.79	+1.97	+5.58
Sacramento Bypass																			
Downstream of Sac. Weir (1.68)	36.15	36.14	36.16	36.16	36.16	36.16	36.18	36.16	36.18	36.24	+0.01	+0.01	+0.01	+0.01	+0.01	+0.03	+0.01	+0.03	+0.09
Yolo Bypass east levee (0.56)	33.94	33.95	33.95	33.95	33.95	33.96	33.96	33.95	33.97	34.02	+0.01	+0.01	+0.01	+0.01	+0.02	+0.02	+0.01	+0.03	+0.08
Yolo Bypass																			
W. Sacramento city limit (44.6)	33.42	33.42	33.43	33.43	33.42	33.43	33.44	33.43	33.44	33.50	0.00	+0.01	+0.01	0.00	+0.01	+0.02	+0.01	+0.02	+0.08
SPRR Bridge (43.24)	32.82	32.83	32.83	32.84	32.83	32.84	32.85	32.83	32.85	32.92	+0.01	+0.01	+0.02	+0.01	+0.02	+0.03	+0.01	+0.03	+0.10
Interstate 80 (42.96)	32.7	32.71	32.71	32.72	32.71	32.72	32.72	32.71	32.73	32.79	+0.01	+0.01	+0.02	+0.01	+0.02	+0.02	+0.01	+0.03	+0.09
Navigation Levee north end (41.65)	32.36	32.35	32.35	32.36	32.35	32.36	32.39	32.36	32.39	32.46	+0.01	+0.01	+0.02	+0.01	+0.02	+0.03	+0.02	+0.03	+0.10
W. Sacramento city limit (38.46)	30.75	30.76	30.77	30.77	30.76	30.77	30.79	30.77	30.80	30.90	+0.01	+0.02	+0.02	+0.01	+0.02	+0.04	+0.02	+0.05	+0.15
Lisbon Gage (36.2)	29.71	29.72	29.73	29.74	29.73	29.74	29.76	29.74	29.77	29.89	+0.01	+0.02	+0.03	+0.02	+0.03	+0.05	+0.03	+0.06	+0.18
Babel Slough (34.02)	28.75	28.76	28.77	28.78	28.76	28.78	28.81	28.78	29.21	28.98	+0.01	+0.02	+0.03	+0.01	+0.03	+0.06	+0.03	+0.06	+0.23

Location	Existing Condition WSE [ft-NAVD88]	WSE for given Scenario [ft-NAVD88]									WSE for Given Scenario Minus Existing Condition WSE [ft-NAVD88]								
		Low Rate			Intermediate Rate			High Rate			Low Rate			Intermediate Rate			High Rate		
		25yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr	25 yr	50 yr	100 yr
Clarksburg Road (31.89)	27.62	27.63	27.64	27.65	27.64	27.66	27.69	27.65	27.70	27.92	+0.01	+0.02	+0.03	+0.02	+0.04	+0.07	+0.03	+0.08	+0.30
Hamilton Road (29.42)	25.43	25.46	25.48	25.50	25.47	25.50	25.56	25.50	25.58	25.97	+0.03	+0.05	+0.07	+0.04	+0.07	+0.13	+0.07	+0.15	+0.54
Port of Sacramento																			
SA 236	20.23	20.27	20.27	20.30	20.30	20.34	20.47	20.35	20.52	21.35	+0.04	+0.04	+0.07	+0.04	+0.08	+0.24	+0.09	+0.29	+1.12
Sacramento Ship Channel																			
Marshall Road (40.72)	20.22	20.26	20.28	20.31	20.28	20.31	20.47	20.35	20.52	21.35	+0.04	+0.06	+0.09	+0.06	+0.09	+0.25	+0.10	+0.30	+1.13
W. Sacramento city limit (38.46)	20.21	20.25	20.28	20.31	20.27	20.31	20.46	20.32	20.52	21.35	+0.04	+0.07	+0.10	+0.06	+0.10	+0.25	+0.11	+0.31	+1.14
Source: Table 3 in MBK Engineers 2009b.																			

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As Table 3.2-23 illustrates, the WSLIP program area is relatively insensitive to the rates of sea-level rise. Of all the scenarios analyzed, only the high sea-level rise rate 100 years after the project is constructed shows greater than one-tenth of a foot stage increase in the Sacramento River, Yolo Bypass, or Sacramento Bypass in the WSLIP program area.

The Port of Sacramento and the DWSC see larger increases resulting from sea-level rise. The DWSC is primarily backwater controlled and is hydraulically connected to the rest of the flood system fairly close to the sea (i.e., North Delta). The WSLIP design for the DWSC indicates there is adequate freeboard available to accommodate a water surface increase of the magnitudes reported herein due to sea-level rise and still maintain the minimum project design freeboard of three feet (MBK Engineers 2009b).

Evaluation of the Effects of Potential Cumulative Development in the Sacramento River Corridor Floodway

MBK Engineers (2005) performed a hydraulic analysis of the effects of potential cumulative development in the Sacramento River corridor floodway between Verona and Courtland on flood stages and flows.

Overall Modeling Approach

The effect analysis was done using a modified version of the Sacramento River basin UNET model developed by USACE for the Comp Study. The model was modified and recalibrated as documented in *Modifications, Refinements and Re-Calibration of the Sacramento and San Joaquin River Basins Comprehensive Study Sacramento Basin UNET Model* (MBK Engineers 2003).

The Sacramento River basin UNET model, which was calibrated to the January 1997 flood event, includes the following river reaches, along with numerous tributaries to these rivers:

- Sacramento River from Woodson Bridge (River Mile 218) to Collinsville (RM 0)
- Feather River below Thermalito (RM 58.5)
- Yuba River below Englebright Reservoir (RM 22)
- Bear River below Wheatland (RM 12.5)
- Sutter Bypass
- American River below Folsom Lake (RM 22.0)
- Yolo Bypass

Cumulative Development Components

The study area for the cumulative conditions hydraulic analysis was the Sacramento River from the Fremont Weir to just below Courtland as shown in Figure 1 of MBK Engineers (2005). The cumulative development components included in the analysis include the following elements:

- new bridges;
- addition of dense private docks, fishing piers, and waterside rock bench armoring;
- new marina complexes; and

- riparian vegetation enhancement.

Detailed descriptions of the components included in the hydraulic model and how they were modeled are provided in sections 3.1, 3.2, 3.3, and 3.4 of MBK Engineers (2005).

Hydrologic Inputs and Assumptions

As part of the Comp Study, USACE developed a hydrologic data set for the Sacramento River Basin UNET model. The hydrologic data set includes flow data for the UNET model upstream boundaries for flood events with 2-, 10-, 25-, 50-, 100-, 200- and 500-year return frequencies that were developed from the following 11 hypothetical storm centerings:

- Ord Ferry (Sacramento River mainstem at latitude of Ord Ferry)
- Sacramento (Sacramento River mainstem at latitude of Sacramento)
- Stony Creek
- Shasta
- Butte Creek
- Oroville
- Yuba River
- Bear River
- American River
- Cache and Putah Creeks
- Delta

The hydrology used for this analysis was the Sacramento centering, which was developed to place the most stress on the system at the latitude of Sacramento.

Effects of the cumulative development were determined for two flood events:

- January 1997 Flood.
- Maximum flow flood event. This event is modeled using the 1 in 100 AEP flood event on the Sacramento River basin with the 1 in 200 AEP flood event on the American River. The flow data used were from the Sacramento centering hydrology developed by the Corps for the Comp Study. The Maximum Flow flood event simulation used a system-wide assumption that levees would overtop but would not fail. This combination of events and levee assumptions represents a maximum flow condition for the urban center from the Sacramento Weir downstream to Freeport.

Hydraulic Analysis and Results

January 1997 Flood Simulation—Water Surface Elevation

Plots of the Sacramento River maximum water surface January 1997 flood simulation profiles for with and without cumulative development are provided in Figure 20 of MBK Engineers (2005). The effects of the cumulative development at various locations are highlighted on the profile plots.

Table 3.2-24 summarizes maximum water surface elevations and corresponding cumulative development effects.

The maximum water surface elevation increase attributable to the cumulative development is 0.20 foot just upstream of Interstate 5. The effect downstream of the American River through the downtown Sacramento area ranges from +0.05 to +0.07 foot. From the Pocket area downstream, the cumulative development results in a maximum water surface elevation reduction. This reduction is the result of a flow reduction in the Sacramento River downstream of the American River as a result of slight increases in the diversions at the Fremont and Sacramento Weirs. The flow and velocity effects are discussed in more detail in sections 5.2 and 5.3, respectively, of MBK Engineers (2005). The amount of additional flow being diverted to the Yolo Bypass is small relative to total flow being diverted and results in a maximum effect on the Yolo Bypass water surface elevation of +0.03 foot.

Table 3.2-24. Peak Stages and Impacts

	January 1997 Flood Simulation			Maximum Flow Flood Simulation		
	Peak Stage (feet NAVD 88)		Impact	Peak Stage (feet NAVD 88)		Impact
Location	Existing	Cumulative Dev.	(feet)	Existing	Cumulative Dev.	(feet)
Sacramento River						
u/s end Fremont Weir	41.73	41.76	+0.03	42.95	42.98	+0.03
d/s end Fremont Weir	41.65	41.68	+0.03	42.85	42.88	+0.03
at Verona gage	41.88	41.94	+0.06	43.24	43029	+0.05
u/s I-5 Marina	37.94	38.14	+0.20	39.89	40.04	+0.15
u/s San Juan Rd. Marina	33.95	34.06	+0.11	36.75	36.84	+0.09
u/s end Sac Weir	32.58	32.58	0.00	35.74	35.76	+0.02
d/s end Sac Weir	3.31	33.15	+0.05	36.09	36.11	+0.02
at I Street	32.82	32.88	+0.06	36.05	36.10	+0.05
at Freeport gage	26.54	26.39	-0.15	29.47	29.29	-0.18
at Snodgrass Slough	21.81	21.65	-0.16	24.40	24.23	-0.17
Yolo Bypass						
at Woodland gage	33.96	33.99	+0.03	35.62	35.64	+0.02
at Lisbon gage	26.69	26.71	+0.02	28.59	28.61	+0.02

Source: MBK Engineers 2005 (Sacramento River Corridor Floodway Planning Forum *Hydraulic Impact Analysis Of Cumulative Development In Sacramento River Corridor Floodway*).
u/s = upstream; d/s = downstream.

Maximum Flow Flood Simulation—Water Surface Elevation

Plots of the Sacramento River maximum water surface maximum flow flood simulation profiles for with and without cumulative development are provided in Figure 21 of MBK Engineers (2005). The effects of the cumulative development at various locations are highlighted on the profile plots. Table 3.2-24 summarizes maximum water surface elevations and corresponding cumulative development effects.

The maximum water surface elevation increase attributable to the cumulative development is 0.15 foot just upstream of I-5. The effect downstream of the American River through the downtown Sacramento area ranges from +0.03 to +0.05 foot. From the Pocket area downstream, the cumulative development results in a maximum water surface elevation reduction. This reduction is the result of a flow reduction in the Sacramento River downstream of the American River as a result of slight increases in the diversions at the Fremont and Sacramento Weirs. The flow and velocity effects are discussed in more detail in Sections 5.2 and 5.3, respectively, of MBK Engineers (2005). The amount of additional flow being diverted to the Yolo Bypass is small relative to total flow being diverted and results in a maximum effect on the Yolo Bypass water surface elevation of +0.02 foot.

3.2.3 Environmental Consequences

This section describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Then it discusses each effect and the treatment(s) to which it applies and the reaches where the effect occurs, concludes whether the effect would be significant, and lists any measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects. How an effect differs among reaches is discussed, as applicable.

3.2.3.1 Methods

Assessment of environmental effects associated with hydrology, hydraulics, geomorphology, and flood control issues has been accomplished through the following means:

- MBK Engineers (2009a) quantitative modeling of the WSLIP,
- MBK Engineers (2009b) report on effects of projected sea level change,
- MBK Engineers (2007) quantitative modeling of the effects of Sacramento River West Levee Setback at Oak Hall Bend,
- MBK Engineers (2005) hydraulic analysis of the effects of potential cumulative development in the Sacramento River corridor floodway between Verona and Courtland on flood stages and flows,
- an evaluation of existing conditions of proposed program area levees and projected incision and scour estimates in the adjacent waterways,
- qualitative assessments of sedimentation/scour potential based on existing Federal and state channel hydraulic design standards and guidelines, and
- determination of effects through professional judgment.

3.2.3.2 Determination of Effects

Here the thresholds for significance under CEQA are listed and, if there are NEPA thresholds, these are also identified. In this joint Federal and state EIS/EIR, reference to “significant impacts” is made to fulfill the requirement under CEQA, pursuant to standards of California law. If there are differences between the CEQA and NEPA thresholds, these are identified. However, regardless of level of significance, all potentially significant environmental effects have been analyzed and are discussed.

The criteria used for determining the significance of an effect on hydrology, hydraulics, geomorphology, and flood control are based on Appendix G of the State CEQA Guidelines (Environmental Checklist) and professional standards and practices.

Effects on hydrologic or geomorphic conditions may be considered significant if implementation of an alternative would:

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site;
- substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;
- place within a 100-year flood hazard area structures that would impede or redirect floodflows; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Effects on flood control may be considered significant if implementation of an alternative would:

- significantly raise flood stage elevations;
- increase the frequency and duration of inundation of lands; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee.

An effect on the levee system is considered significant if an alternative would substantially increase any of the following:

- seepage,
- levee settlement,
- wind erosion,
- bank erosion or bed scour,
- sediment deposition, or
- subsidence of land adjacent to levees.

In addition, an effect on the levee system is considered significant if an alternative would substantially decrease any of the following:

- levee stability;
- inspection, maintenance, or repair capabilities;
- current level of levee slope protection;
- emergency response capabilities;
- channel conveyance capacity; or
- the ability of the levees to withstand seismic forces.

3.2.3.3 Effects and Mitigation Measures

This section analyzes program effects for the study area. Local, upstream, and downstream effects are analyzed separately where applicable, but are also described in more detail as part of the Cumulative Effects discussion in Chapter 6, Growth-Inducing and Cumulative Effects. Effects related to mean sea level change are only addressed in the No Action Alternative below because, as described above, the WSLIP program area is relatively insensitive to the rates of sea-level rise. Of all the scenarios analyzed, only the high sea-level rise rate 100 years after the project is constructed shows greater than one-tenth of a foot stage increase in the Sacramento River, Yolo Bypass, or Sacramento Bypass in the WSLIP program area.

3.2.3.3.1 No Action Alternative

Under the No Action Alternative, the geomorphic and flood control regimes would not change relative to existing conditions. However, the current levees would remain susceptible to failure as a result of existing levee deficiencies such as seepage, erosion, inadequate height, and slope instability. Under these conditions, any of the levee deficiencies could cause portions of the levee system to fail, triggering widespread flooding and extensive damage to the city's existing residential, commercial, agricultural, and industrial structures, and potential loss of life (refer to Figure 2-2: *100-Year Flood Event Estimated Flood Depths* for the 100-year programmatic flood scenario which indicates that inundation levels would range from 1 foot to 15 feet throughout the City, depending upon the elevation of the land surface; also refer to the discussion in Chapter 2 for additional information). If levees were breached or overtopped by the Sacramento River, DWSC, or Yolo or Sacramento bypasses, the West Sacramento basin(s) would fill with water and hydrostatic pressure on the both sides of the levees could cause excessive saturation and levee weakening. This condition would further reduce levee integrity and result in an even greater risk of levee collapse, failure and further flooding and damage.

Furthermore, there are several proposed levee strengthening projects in upstream areas (See Section 1.6, Related Actions, Programs, and Planning Efforts) that may transfer flood risk to the study area if the levees within the study area were to remain below current engineering standards while other upstream levees were improved to meet or exceed current standards. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on geomorphic and flood control conditions cannot be quantified based on available information.

Additionally, with respect to future mean sea-level change, the Port of Sacramento and the DWSC see larger increases from sea-level rise than the other reaches. The WSLIP design for the DWSC indicates there is adequate freeboard available to accommodate a water surface increase of the magnitudes reported herein due to sea-level rise and still maintain the minimum project design freeboard of three feet (MBK Engineers 2009b); however, if the project were not to be constructed, then future mean sea level rise would certainly be a concern for this reach.

In its levee vegetation guidance, the USACE has established a woody vegetation free zone required for operations and maintenance of Federal project levees. Compliance with this levee vegetation guidance could result in the removal of a substantial amount of vegetation. However, compliance with future vegetation policy enforcement on the study area levees would not have any noteworthy effects on the geomorphic and/or flood control regimes of the Sacramento River within the study area.

3.2.3.3.2 Flood and Recreation Program Alternatives

Effect FC-1: Change in Water Surface Elevations and Flood Safety Attributable to Project Design

Local and Upstream Effects (Flood Program)

No significant local or upstream flood control–related effects are associated with a levee raise, a setback levee or installation of stop logs or a floodwall for the Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, and Yolo Bypass Levees, as those treatments would help minimize flooding locally behind the improved levees and enable the levees to meet associated regulatory criteria.

As determined through a robust modeling effort for the WSLIP, MBK Engineers (2009a) concluded that there are no calculated effects of the WSLIP for the 1-in-100-year and 1-in-200-year flood events (see Tables 3.2-16 and 3.2-17 above). For the 1-in-500-year flood, the maximum water surface elevation change on the Sacramento River between the Without Project and With Project conditions is 0.10 foot at RM 59.0 (see Table 3.2-18 above). However, even these relatively minor computed effects are considered extremely implausible, given the significant portion of upstream and adjacent levees overtopped (see Table 3.2-19 above for quantification of the levee overtopping from this analysis and Appendix A of MBK Engineers [2009a] for analysis where upstream levees are allowed to fail) by this flood without any levee failures occurring.

Based on the quantitative results from the MBK Engineers modeling effort (2009a), upstream water levels would not be significantly affected by the proposed levee raises or other treatments either, assuming that all upstream levee strengthening components described above in Table 3.2-15 are eventually implemented.

Raising levees or implementing the other treatments would not significantly alter water surface elevation in and above the proposed program area. These treatment would not significantly change the geometry of the Sacramento River and therefore would not cause significant changes to water flow in the river or cause negative hydraulic effects within or upstream of the proposed program area. Levee raises, setback levees, closure structures, and floodwalls would not expose people or structures to a significant risk of flooding. Rather, this risk would be alleviated because these treatments would reduce the risk of levee overtopping for the 100- and 200-year floods. Because these treatments would upgrade existing levees using up-to-date design and construction standards, their implementation would reduce the risk of flooding for the proposed program area.

Downstream Effects (Flood Program)

Levee raises or setbacks and installation of closure structures or floodwalls could represent an unacceptable transfer of flood risk to adjacent or downstream levee districts. However, as described in MBK Engineers (2009a) modeling effort for the WSLIP, raising and strengthening portions of the Federal project levee system protecting West Sacramento and implementing in-channel erosion protection measures would not result in any significant hydraulic effects on other sub-basins protected as part of the Flood Control Project. Furthermore, these improvements would be consistent with the principles that have guided the management of the Flood Control Project over the past century and with the policies adopted by the State Legislature calling for an immediate and comprehensive effort to increase the level of flood protection provided to West Sacramento and the other urban areas within the Flood Control Project.

Local and Upstream Effects (Recreation Program)

Modeling results for the January 1997 Flood Simulation performed by MBK Engineers (2005) concluded that water surface elevation effects downstream of the American River through the downtown Sacramento area range from +0.05 to +0.07 feet. Modeling results for the Maximum Flow Flood Simulation performed by MBK Engineers (2005) concluded that water surface elevation effects downstream of the American River through the downtown Sacramento area range from +0.03 to +0.05 feet.

Downstream Effects (Recreation Program)

Modeling results for both the January 1997 Flood Simulation and the Maximum Flow Flood Simulation performed by MBK Engineers (2005) concluded that from the Pocket area downstream impacts of the cumulative development result in a maximum water surface elevation reduction. This reduction is the result of a flow reduction in the Sacramento River downstream of the American River due to slight increases in the diversions at the Fremont and Sacramento Weirs. The flow and velocity impacts are discussed in more detail in Sections 5.2 and 5.3, respectively, of MBK Engineers (2005).

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full)	▪ Closure structure ▪ Setback levee ▪ Flood wall
Recreation	▪ Riverside parks	▪ Developed water access

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, and Yolo Bypass.

Effect FC-1 Finding	With Mitigation
Flood: Beneficial (local and upstream) Flood: Less than significant (downstream) Recreation: Less than significant (local, upstream and downstream)	

Effect FC-2: Decrease in Risk of Levee Failure as a Result of Erosion or Seepage

Flood program alternatives such as an adjacent, full, or in-place levee raise would add material to the levee, which would help to decrease relative erosion. More levee material would require a greater amount of erosion to cause a breach. Presently, in the Sacramento River North and South reaches, the average velocities during the 200-year projected peak flow do not present a significant concern for surface erosion by flows parallel to the bank, except where the banks have no vegetation

or other bank protection or where significant obstructions project into the flow and generate eddies and complex flows capable of eroding the streambank (Northwest Hydraulic Consultants 2007a).

A new setback levee alternative would involve up-to-date design and construction methods to avoid erosion, and it is assumed that bank erosion on the newly reshaped bank (i.e., former levee surface) on the waterside would remain minimal as features associated with this treatment would be engineered to withstand the forces of erosion by flowing water.

Additionally, levee raises and/or the construction of a setback levee would provide more material in the landward direction to help reduce the levee through-seepage potential. These treatments would not result in any long-term changes to the overall existing drainage pattern of the study area Furthermore, they would not change the existing potential for through-seepage upstream and downstream of the study area as water surface elevations would not change significantly upstream or downstream, and current seepage rates do not contribute to substantial reductions in channel flows or water surface elevations. The change in hydrologic conditions resulting from these treatments is not expected to result in a substantial increase in seepage through or under adjacent levees because any upstream or downstream levee will be engineered appropriately to an equal level of protection. Within the study area itself, other treatments aim to rectify through-seepage concerns.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (adjacent)	▪ Levee raise (in place)
	▪ Levee raise (full)	▪ Setback levee

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port South, South Cross, and DWSC East and West.

Effect FC-2 Finding	With Mitigation
Beneficial	N/A

Effect FC-3: Alteration of the Existing Drainage Pattern of the Site or Area

Implementation of flood program alternatives (adjacent levee raise, full levee raise, setback levee, slope flattening, relief wells, stability berm, interior drain, seepage berm), and recreation program alternatives could involve earthwork on the landward side of the levee. The new material on the landside could cross drainage infrastructure maintained by local landowners or local agencies in some locations or alter surface runoff patterns. Because interference with drainage could cause or exacerbate local flooding, this effect would be potentially significant. The presence of the newly modified levee itself could also alter the course of local runoff. The implementation of Mitigation Measure FC-FC-MM-1 would reduce this effect.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Setback levee ▪ Slope flattening	▪ Relief wells ▪ Stability berm ▪ Interior drain ▪ Seepage berm
Recreation	▪ Trails	▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass.

Effect FC-3 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design

The agencies implementing program components and their primary contractors for engineering design and construction will ensure that the following measures are implemented to avoid significant effects associated with disruption of local drainage systems.

During project design, project engineers will coordinate with owners and operators of local drainage systems and landowners served by the systems to evaluate pre- and post-WSLIP drainage needs and design features to remediate any program-related substantial drainage disruption or alteration in runoff that would increase the potential for local flooding. If substantial alteration of runoff patterns or disruption of a local drainage system could result from a project feature, a drainage study will be prepared as part of project design. The study will consider the design flows of any existing facilities that would be crossed by project features and develop appropriate plans for relocation or other modification of these facilities and construction of new facilities, as needed, to ensure equivalent functioning of the system during and after construction. If no drainage facilities (e.g., ditches, canals) would be affected, but project features would have a substantial significant effect on runoff amounts and/or patterns, new drainage systems will be included in the design of project alternatives to ensure that the project would not result in new or increased local flooding. Any necessary features to remediate project-induced drainage problems will be constructed before the project is completed or as part of the project, depending on site-specific conditions.

Effect FC-4: Increase in Channel Bed Incision and Bank Erosion Attributable to Heightened Levees

Flood program alternatives related to levee height are expected to provide 200-year flood protection in the study area and will contain larger floodflows within the Sacramento River channel. With no overtopping, channel flow energy potentially could increase erosion and may transfer greater energy to downstream reaches. However, considering the infrequency of flood events greater than the 200-year event, the alternatives that address levee height create little additional risk to the levee system as a whole. The levee system is not expected to provide protection for these larger flood events and is not considered in the significance assessment.

Additionally, even without program implementation, the apparent rates of incision in the second half of the 20th century and present low-water elevations, it is unlikely that further significant incision of the Sacramento River downstream of Verona would occur (Northwest Hydraulic Consultants 2007a). If any, further incision would be unlikely to exceed 1 foot or so, an amount that is negligible in comparison to potential transitory riverbed incision resulting from major floods (Northwest Hydraulic Consultants 2007a).

With respect to bank erosion, presently in the Sacramento River North and South reaches, the average velocities during the 200-year projected peak flow do not present a significant concern for surface erosion by flows parallel to the bank, except where the banks have no vegetation and no other bank protection or where significant obstructions project into the flow and generate eddies and complex flows capable of eroding the streambank (Northwest Hydraulic Consultants 2007a). The proposed alternatives would create an even more erosion-resistant levee, thus not significantly affecting bank erosion rates.

Compliance with the USACE levee vegetation guidance could increase bank erosion through loss of vegetation and disruption of soil structure. However, these effects are not considered to be significant because geotechnical stabilization of the banks would be required after vegetation removal.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full)	▪ Closure structure ▪ Setback levee ▪ Flood wall

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, and Yolo Bypass. Effects are expected to be similar or lesser in magnitude for the program reaches that are not along the Sacramento River (Port North and South Levees, South Cross Levee, DWSC East and West Levees, and Yolo Bypass Levee.

Effect FC-4 Finding	With Mitigation
Less than significant	N/A

Effect FC-5: Decrease in Levee Erosion

Portions of the levee slopes may be protected by the erosion control alternative of rock slope protection. Rock would be placed in a layer approximately 1 foot thick on the waterside of the levee to protect against erosional forces, such as wind and waves. No significant geomorphic or flood program–related effects are associated with rock slope protection, as it would provide more material with a greater resistance to erosion, thus helping to decrease relative erosion amounts. Additionally, the roughness associated with the rock slope protection would counter the increased shear stresses of larger flow events that otherwise would increase erosion of the levee fills.

In addition, rock slope protection would not result in any long-term changes to the overall existing drainage pattern of the study area. Furthermore, it would not change the existing potential for levee erosion upstream and downstream of the study area.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative
Flood	▪ Rock slope protection

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, and DWSC East and West.

Effect FC-5 Finding	With Mitigation
Beneficial	N/A

Effect FC-6: Decrease in Through- and Under-Seepage

Through- and under-seepage has the potential to weaken levee foundations. Flood alternatives for seepage control such as a sheet pile wall, slurry cutoff wall, and jet grouting would reduce or eliminate the potential for seepage. Sheet pile walls and slurry cutoff walls create walls of impermeable material that act as a barrier to water moving laterally through a levee, greatly reducing or eliminating the potential for through-seepage. Similarly, jet grouting involves injecting a binding material in the soil and is typically used in areas where physical access is limited. The binding material also creates an area that is impermeable and reduces or eliminates through seepage. Similarly, the seepage berm flood program alternative results in a wide embankment structure that resists accumulated water pressure. All of these seepage control alternatives would result in beneficial effects on flood conditions in the study area.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Sheet pile wall	▪ Jet grouting
	▪ Slurry cutoff wall	▪ Seepage berm

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass.

Effect FC-6 Finding	With Mitigation
Beneficial	N/A

Effect FC-7: Transfer of Seepage to Upstream or Downstream Levees

Installation of flood program alternatives that reduce seepage (e.g., sheet pile walls, slurry cutoff walls, jet grouting, or seepage berms) may have a slight effect on the potential for seepage to occur through levee sections immediately upstream or downstream, due to redirection of hydraulic force.

However, the change in hydrologic conditions resulting from these treatments is not expected to result in a substantial increase in seepage through or under adjacent levees because any upstream or downstream levee will be engineered appropriately to an equal level of protection. Incremental improvements to the system will be made over a period of years and these improvements would reduce or eliminate any seepage problems.

The alternatives are also not expected to have an effect on upstream or downstream water surface elevations because the height of the levee would not be increased and current seepage rates do not contribute to substantial reductions in channel flows or water surface elevations.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Sheet pile wall	▪ Jet grouting
	▪ Slurry cutoff wall	▪ Seepage berm

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass.

Effect FC-7 Finding	With Mitigation
Less than significant	N/A

Effect FC-8: Increase in Levee Slope Stability

The flood program alternatives such as slope flattening, stability berms and setback levees can result in increased levee slope stability.

Slope flattening is a mechanical method to place additional fill material along the slope of a levee to repair and reshape slopes that may not be stable or to meet the requirement of 3:1 (H:V). A stability berm is typically constructed against the landside slope of the levee and acts as a buttress to stabilize slopes.

A setback levee is an entirely new section of levee (built utilizing the appropriate slope ratios) constructed at some distance landside of the existing levee. The existing levee (typically with geometry that does not meet current standards) can remain in place, be lowered, breached at several locations, or removed, dependent upon conditions within that levee reach. A setback levee would result in increased levee slope stability in the reach where it is constructed. No significant geomorphic or flood program–related effects are associated with a setback levee.

Treatments that increase levee slope stability would have beneficial effects on geomorphic and flood conditions.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Slope flattening ▪ Setback levee	▪ Stability berm

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River North, Sacramento River South, Port South, South Cross, DWSC East, Sacramento Bypass, and Yolo Bypass.

Effect FC-8 Finding	With Mitigation
Beneficial	N/A

Effect FC-9: Redirection of Under-Seepage

Flood program alternatives that address under-seepage include relief wells, and interior drains. Both of these treatments provide pathways to safely capture and release under-seepage and reduce the potential for under-seepage to weaken levee foundation soils via piping or sand boils. Flood program alternatives that result in the re-direction of under-seepage would create beneficial effects on geomorphic and flood conditions.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Relief wells	▪ Interior drain

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in the following reaches: Sacramento River South, South Cross, and DWSC East.

Effect FC-9 Finding	With Mitigation
Beneficial	N/A

Effect FC-10: Minimization of Stream Energy and Associated Floodplain Scour and/or Deposition

A setback levee is an entirely new section of levee constructed at some distance landside of the existing levee. The existing levee can remain in place, be lowered, breached at several locations, or removed, dependent upon conditions within that levee reach. No significant geomorphic or flood program–related effects are associated with a setback levee for the Sacramento River South Levee. Modeling for the setback levee as performed by MBK Engineers (Tustison pers. comm.) shows a general decrease in the water surface elevation upstream of the setback levee, while areas downstream see slightly higher water surface elevations. The slight decrease in the water surface elevation at and upstream of the setback levee associated with more floodplain capacity results in a slight increase in the flow in the Sacramento River downstream of the American River with a corresponding decrease in the flow across the Sacramento Weir (Tustison pers. comm.).

Assuming the existing levee was removed, a setback levee would provide more floodplain capacity for the Sacramento River. This increase in floodplain capacity would decrease the stream energy associated with higher flows on the river by allowing the river to access its floodplain under these higher flows. An increase in floodplain capacity represents an increase in hydraulic capacity, a beneficial effect from a flood program standpoint. Although variability in the magnitude of both floodplain scour and deposition associated with high flows is unknown, it is assumed that deposition would be the predominant geomorphic process associated with a setback levee because of the associated decrease in stream energy. Any amount of scour most likely would be limited to the upstream end. It is assumed that bank erosion on the newly reshaped bank (i.e., former levee surface) on the waterside would remain stable as features associated with this treatment would be engineered to withstand the forces of erosion by flowing water. Associated deposition of fine sediments is considered a beneficial effect as deposition would encourage natural recruitment of woody material and increase the habitat diversity on the floodplain. Furthermore, deposition of a significant amount of fine sediment in the channel is considered unlikely because the channel-forming flow regime would be unchanged.

If the existing levee were to remain in place, the effects discussed above would not occur. Floodplain capacity would remain similar to existing conditions under most flows. However, for flows greater

than the 200-year event that overtopped the existing levee, there is potential for both scour and/or deposition of fine material between the existing levee and the proposed setback levee. The amount of scour and/or deposition most likely would be small and would depend on the slope and available space between the two levees. Regardless, some scour and/or deposition would provide beneficial effects on the floodplain for reasons discussed above.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative
Flood	▪ Setback levee

Affected Reaches

This effect would occur in the Sacramento River South reach.

Effect FC-10 Finding	With Mitigation
Beneficial	N/A

Section 3.3

Water Quality and Groundwater Resources

3.3.1 Introduction

This section describes the affected environment for water quality and groundwater resources, including the regulatory setting associated with water quality and groundwater resources, the effects on water quality and groundwater resources that would result from the proposed program, and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed below:

- Central Valley Regional Water Quality Control Board Water Quality Control Basin Plan (2007)
- List of water quality constituents obtained from the California Data Exchange Center website (California Data Exchange Center 2009)
- *Yolo County General Plan* (Yolo County 2002)
- *City of West Sacramento General Plan Policy Document* (City of West Sacramento 2004)
- *Solano County General Plan* (Solano County 2008)

3.3.2 Affected Environment

3.3.2.1 Regulatory Setting

3.3.2.1.1 Federal

Clean Water Act

The State Water Resources Control Board (State Water Board) is the state agency with primary responsibility for implementing the Federal Clean Water Act (CWA), which establishes regulations relating to water resource issues. Typically, all regulatory requirements are implemented by the State Water Board through nine regional water quality control boards (RWQCBs) established throughout the state. The Central Valley RWQCB is responsible for regulating discharges to the Sacramento River and its tributaries.

The CWA is the primary Federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. Permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

Section 404: Permits for Fill Placement in Waters and Wetlands

CWA Section 404 regulates the discharge of dredged and fill materials into "waters of the United States," which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents

must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States before proceeding with a proposed activity. Before any actions that may affect surface waters are implemented, a delineation of jurisdictional waters of the United States must be completed, following USACE protocols, to determine whether the project area contains wetlands or other waters of the United States that qualify for CWA protection. These areas include:

- sections within the OHWM of a stream, including non-perennial streams with a defined bed and bank and any stream channel that conveys natural runoff, even if it has been realigned; and
- seasonal and perennial wetlands, including coastal wetlands.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3).

Applicants must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. As stated by the Counsel for the EPA's January 19, 2001, determination in response to the Solid Waste Agency of Northern Cook County *v.* U.S. Army Corps of Engineers ruling, non-navigable, isolated waters may not be regulated by USACE. As part of the wetland delineation and verification process, USACE will determine whether the wetlands in the program area are isolated and therefore not regulated under Section 404.

USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are pre-authorized and are issued to cover multiple instances of similar activities expected to cause only minimal significant environmental effects. Nationwide permits (NWPs) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project. Potential waters of the United States in the program area are under the jurisdiction of USACE's Sacramento District.

Compliance with Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, the Federal Endangered Species Act (ESA), and National Historic Preservation Act (NHPA) (see Section 3.18, Cultural Resources) have been met. In addition, USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA Section 401.

Certain activities are exempt from the Section 404 permitting process:

- farming, ranching, and forestry activities that are considered normal and ongoing (as of 1985 conditions), such as plowing, harvesting, and minor drainage of upland areas to waters of the United States;
- construction and maintenance of stock ponds and irrigation ditches;
- maintenance of drainage ditches;
- construction of temporary sedimentation basins in upland areas;
- construction and maintenance of farm, forest, and mining roads in accordance with BMPs; and

- other activities regulated by an approved program of BMPs authorized by CWA Section 208(b)(4).

Section 404 permits may be issued for only the least environmentally damaging practical alternative (i.e., authorization of a proposed discharge is prohibited if there is a practical alternative that would have fewer significant effects and lacks other significant consequences). Section 404 may apply to the proposed program if construction would occur within waters of the United States.

Section 402: Permits for Discharge to Surface Waters

CWA Section 402 regulates discharges to surface waters through the NPDES program, administered by EPA. In California, the State Water Board is authorized by EPA to oversee the NPDES program through the RWQCBs (see related discussion in this section under Porter-Cologne Water Quality Control Act). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits.

Construction Activities

Most construction activities that disturb 1 acre of land or more are required to obtain coverage under the NPDES General Permit for Construction Activities (General Construction Permit), which requires the applicant to file a notice of intent (NOI) to discharge stormwater and to prepare and implement a SWPPP. The SWPPP includes a site map and a description of proposed construction activities, along with a demonstration of compliance with relevant local ordinances and regulations, and an overview of the BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Permittees are further required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants. The City will need to file an NOI with the Central Valley RWQCB to obtain the General Construction Permit before any construction activities begin.

Dewatering Activities

While small amounts of construction-related dewatering are covered under the General Construction Permit, the Central Valley RWQCB has also adopted a General Order for Dewatering and Other Low Threat Discharges to Surface Waters (General Dewatering Permit). This permit applies to various categories of dewatering activities and likely would apply to the proposed program, if construction required dewatering in greater quantities than that allowed by the General Construction Permit and discharged the effluent to surface waters. The General Dewatering Permit contains waste discharge limitations and prohibitions similar to those in the General Construction Permit. To obtain coverage, the applicant must submit an NOI and pollution prevention and monitoring program (PPMP) to the Central Valley RWQCB. The PPMP must include a description of the discharge location, discharge characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. A representative sampling and analysis program must be prepared as part of the PPMP and implemented by the permittee, along with recordkeeping and quarterly reporting requirements during dewatering activities. For dewatering activities that are not covered by the General Dewatering Permit, an individual NPDES permit and waste discharge requirements (WDRs) must be obtained from the Central Valley RWQCB. However, the amount of dewatering needed for the proposed program likely would fall under the General Dewatering Permit because excavation

activities associated with construction of the program elements such as the slurry cutoff walls and sheet pile walls may reach the groundwater table.

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a Federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a Federal component and may affect the quality of the state's waters (including projects that require Federal agency approval, such as the issuance of a Section 404 permit) also must comply with Section 401. The City will obtain a Section 401 certification or waiver from the Central Valley RWQCB.

Section 303: Impaired Waters

California adopts water quality standards to protect beneficial uses of state waters as required by CWA Section 303 and the Porter-Cologne Water Quality Control Act of 1969. Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop a list of water quality-limited segments. In California, the State Water Board develops the list of water quality-limited segments; the EPA approves each state's list. Waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. Section 303(d) also establishes the total maximum daily load (TMDL) process to guide the application of state water quality standards.

3.3.2.1.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, passed in 1969, articulates with the CWA. It established the State Water Board and divided the state into nine regions, each overseen by an RWQCB. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, although much of its daily implementation authority is delegated to the RWQCBs, which are responsible for implementing CWA Sections 402 and 303(d). In general, the State Water Board manages both water rights and statewide regulation of water quality, while the RWQCBs focus exclusively on water quality within their regions.

Central Valley Regional Water Quality Control Board

The Central Valley RWQCB is responsible for implementing its Water Quality Control Plan (Basin Plan) (2007) for the Sacramento River and its tributaries. The Basin Plan identifies beneficial uses of the river and its tributaries and water quality objectives to protect those uses. Numerical and narrative criteria are contained in the Basin Plan for several key water quality constituents, including dissolved oxygen (DO), water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents.

The methods the Central Valley RWQCB uses to implement the Basin Plan criteria include issuing WDRs. WDRs are issued to any entity that discharges to a surface water body and does not meet certain water quality criteria such as those related to sediment. The WDR/NPDES permit also serves

as a federally required NPDES permit (under the CWA) and incorporates the requirements of other applicable regulations.

Basin Plans and Water Quality Objectives

The Porter-Cologne Water Quality Control Act provides for the development and periodic review of basin plans that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are implemented primarily by using the NPDES permitting system to regulate waste discharges so that water quality objectives are met (see discussion of the NPDES system under CWA above). Basin plans are updated every 3 years and provide the technical basis for determining WDRs and taking enforcement actions. The Central Valley RWQCB Basin Plan was last updated in 2007.

Water Quality Objectives by Region

The RWQCBs have set water quality objectives for all surface waters in their respective regions (including the Sacramento River basin) for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, DO, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

State Implementation Plan

In 1994, the State Water Board and EPA agreed to a coordinated approach for addressing priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. In March 2000, the State Water Board adopted a state implementation plan (SIP) for priority toxic pollutant water quality criteria contained in the California Toxics Rule (CTR). EPA promulgated the CTR in May 2000. The SIP also implements National Toxics Rule (NTR) criteria and applicable priority pollutant objectives in the basin plans. In combination, the CTR and NTR and applicable basin plan objectives, existing RWQCB beneficial use designations, and SIP compose water quality standards and implementation procedures for priority toxic pollutants in non-ocean surface waters in California, such as the Sacramento River.

3.3.2.1.3 Local

City of West Sacramento General Plan

The City is in the process of updating its general plan that was adopted in 1990. The Natural Resources section of the existing general plan contains a number of goals and polices related to water quality.

Goal A: To protect water quality in the Sacramento River, Sacramento Deep Water Ship Channel, Lake Washington, and the area's groundwater basin.

Policies

1. The City shall prohibit the establishment of any new septic systems within areas where City sewer and water service are available within one air mile and shall require that new septic tank installation elsewhere be limited to one acre or larger parcels.
2. The City shall seek the elimination of existing septic tanks in urbanized areas.
3. The City shall not approve new development that has a significant potential for adversely affecting water quality in the Sacramento River, the Deep Water Ship Channel, Lake Washington, or the area's groundwater basin.
4. The City shall regularly monitor water quality in City wells for evidence of toxics, saltwater intrusion, and other contaminants.
5. The City shall utilize the CEQA process to identify and avoid or mitigate potential groundwater pollution problems resulting from new commercial and industrial development.
6. The City shall support efforts on a county, regional, or statewide basis to reduce runoff of toxic agricultural chemicals into the Sacramento River.
7. The City shall implement measures to minimize the discharge of sediment into its watercourses.
8. The City shall continue to encourage responsible state agencies to prohibit the discharge of saltwater ballast into the Deep Water Ship Channel.

Yolo County General Plan

The *Yolo County General Plan* is also in the process of being updated, and a draft revised General Plan is available on the County website. The Conservation and Open Space Element contains goals on polices in regard to water resources. The following goal and polices are included in the Yolo County General Plan:

Goal CO-5: Water Resources. Ensure an abundant, safe, and sustainable water supply to support the needs of existing and future generations.

Policy CO-5.6. Improve and protect water quality for municipal, agricultural, and environmental uses.

Policy CO-5.7. Support mercury regulations that are based on good science and reflect an appropriate balancing of sometimes competing public values including health, food chain, reclamation and restoration of Cache Creek, sustainable and economically viable Delta agriculture, necessary mineral extraction, flood control, erosion control, water quality, and habitat restoration.

Policy CO-5.8. Support efforts to reduce the accumulation of methyl mercury in fish tissue in Cache Creek and the Delta, as well as the consumption of fish with high levels of methyl mercury.

Policy CO-5.12. Support the integrated management of surface and groundwater, stormwater treatment and use, the development of highly treated wastewater, and desalinization where feasible.

Policy CO-5.17. Require new development to be designed such that nitrates, lawn chemicals, oil, and other pollutants of concern do not impair groundwater quality.

Policy CO-5.21. Encourage the use of water management strategies, biological remediation, and technology to address naturally occurring water quality problems such as boron, mercury, and arsenic.

Policy CO-5.22. Work with other agencies and non-profit organizations to provide educational and technical assistance programs to encourage farmers to adopt agricultural methods that improve water quality.

Policy CO-5.23. Support efforts to meet applicable water quality standards for all surface and groundwater resources.

Policy CO-5.24. Pursue funding to remediate historic mines and other sources of mercury contamination on the Cache Creek watershed.

Solano County General Plan

The *Solano County General Plan* was updated in December 2008. Water quality–related polices are included in the Resources chapter of the General Plan and are as follows:

RS.P-64. Identify, promote, and seek funding for the evaluation and remediation of water resource or water quality problems through a watershed management approach. Work with the regional water quality control board, watershed focused groups, and stakeholders in the collection, evaluation and use of watershed-specific water resource information.

RS.P-65. Require the protection of natural water courses.

RS.P-70. Protect land surrounding valuable water sources, evaluate watersheds, and preserve open space lands to protect and improve groundwater quality, reduce polluted surface runoff, and minimize erosion.

RS.P-71. Ensure that land use activities and development occur in a manner that minimizes the effect of earth disturbance, erosion, and surface runoff pollutants on water quality.

RS.P-72. Preserve riparian vegetation along county waterways to maintain water quality.

RS.P-73. Use watershed planning approaches to resolve water quality problems. Use a comprehensive stormwater management program to limit the quantity and increase the water quality of runoff flowing to the county's streams and rivers.

RS.P-74. Identify naturally occurring and human-caused contaminants in groundwater in new development projects and develop methods to limit and control contaminants. Work with RWQCB to educate the public on evaluating the quality of groundwater.

RS.P-75. Require and provide incentives for site plan elements (such as permeable pavement, swales, and filter strips) that limit runoff and increase infiltration and groundwater recharge.

3.3.2.2 Environmental Setting

This section discusses the existing conditions related to surface water quality and groundwater quality in the proposed program area, which includes the Sacramento River both north and south of the city of West Sacramento. Portions of the DWSC also are included in the proposed program area.

3.3.2.2.1 Surface Water Quality

Water management operations at Shasta Dam and other flow-regulating facilities substantially influence the flow regime of the Sacramento River. Water quality dynamics also have been influenced by the operation of these flow-regulating facilities. The water quality of the Sacramento River is good to excellent, with relatively cool water temperatures, low biochemical oxygen demand (BOD), medium to high DO, and low mineral and nutrient content. In general, the surface water quality of the Sacramento River is representative of agricultural return flows, urban runoff, and natural sedimentation from scouring.

CWA Section 303(d) establishes the TMDL process to assist in guiding the application of state water quality standards. It requires the states to identify streams in which water quality is impaired (i.e., affected by the presence of pollutants or contaminants) and to establish the TMDL—the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. The 303(d) list breaks up the Sacramento River into four sections: Keswick Dam to Cottonwood Creek, Cottonwood Creek to Red Bluff, Red Bluff to Knights Landing, and Knights Landing to the Delta. All sections of the Sacramento River are listed on the 303(d) list for unknown toxicity, and the Knights Landing to the Delta section is listed for mercury. Mercury is primarily a legacy of gold mining.

The following sections discuss specific contaminants of concern in relation to the implementation of the program on the Sacramento River. Water quality data for the DWSC and Lake Washington are not available on the California Data Exchange Center (CDEC) website and the USGS website. However, water quality of the DWSC is representative of the quality of water on the Sacramento River near the confluence of the Delta.

Total Suspended Sediment and Turbidity

Total suspended sediment (TSS) is indicative of upstream scouring, bank erosion, and agricultural return flow transporting and depositing sediment. Sediment is considered a pollutant by the Central Valley RWQCB and can transport other contaminants, such as phosphorus, and hydrophobic contaminants, such as organochlorine pesticides. Data were downloaded from the USGS web site from 1997 to 2007 for the Sacramento River at Freeport. Note that more recent flow data (2007 to 2009) are available; however, there is no matching TSS data available for this more recent time frame. Therefore, the most recent available data (2007 to 2009) were used to calculate sediment loads. Monthly average data points are presented in Table 3.3-1. The average January flow on the Sacramento River from 1997 to 2007 is 41,414 cfs, and the average loading of sediment during January is equal to 11,670 (Conversion Factor*TSS*Flow/Ton) tons per day.

Although sedimentation is a natural part of the flow regime for rivers, the Central Valley RWQCB also considers it a pollutant. Excessive sedimentation from construction practices such as placement of riprap on levees or constructing slurry cutoff walls can smother filter-feeding organisms and cause other serious water quality related issues.

Turbidity is another measurement of how much sedimentation is in the water and is done using an optical light probe. Turbidity is measured in nephelometric turbidity units (NTUs). The Basin Plan states that where ambient turbidity is between 5 and 50 NTUs, projects shall not increase turbidity on the Sacramento River by more than 20% above the ambient conditions. Furthermore, if the ambient diurnal variation in turbidity fluctuates in and out of the 5 and 50 NTUs threshold, the Basin Plan states that averaging periods can be applied to data to determine compliance. For

example, during the summer months, the Sacramento River turbidity may be less than 50 NTUs, and during the winter months, the turbidity may be more than 50 NTUs because of the higher flow rate causing more river scouring. Thus monthly average was calculated using hourly CDEC data and is presented in Table 3.3-1 below. Where the ambient turbidity is between 50 and 100 NTUs, a project must not exceed 10 NTUs above ambient conditions. This threshold would apply to the months of January and February (Table 3.3-1).

Specific construction projects that are part of the proposed program will need to comply with the above-stated thresholds for turbidity. However, it is important to note that these thresholds may not be the same during the construction period because the turbidity data presented in Table 3.3-1 are averaged out over only about 1.5 years, and conditions might change.

Table 3.3-1. Monthly Average Total Suspended Solids and Turbidity on the Sacramento River at Freeport from 1997 to 2007

Month	Discharge (cfs)[1]	TSS (mg/L)[1]	TSS Load (tons)	Turbidity (NTU)[2]
January	41,414	104	11,670	64
February	44,084	83	9,839	68
March	39,586	70	7,476	15
April	28,552	51	3,946	11
May	25,152	48	3,279	12
June	21,461	30	1,741	17
July	20,432	37	2,019	21
August	18,235	27	1,332	9
September	16,121	29	1,266	10
October	11,950	29	940	6
November	13,612	24	868	8
December	25,105	81	5,463	12

Sources:

[1] U.S. Geological Survey (USGS) data: <www.usgs.gov>.

[2] California Data Exchange Center (CDED) data: <http://cdec.water.ca.gov>.

Notes:

Flow and TSS data are from the USGS and are presented as monthly average from 1997 to 2007. Turbidity data are from CDEC from March 2007 to January 2009 and also are presented as a monthly average. Turbidity data are from the Sacramento River at Hood, a few river miles downstream from the USGS station.

Dissolved Oxygen, Temperature, Electrical Conductivity, and pH

DO is a critical component for all forms of aquatic life. It also can be highly variable and subject to large oscillations in short time periods. With calm waters and low flows, water bodies can thermally stratify, causing deeper zones to have very low DO concentrations. Additionally, high levels of nutrient loading can cause algal blooms. These blooms can cause large swings in DO levels as the algae populations fluctuate in size, producing oxygen while growing and consuming it while decaying. When DO concentrations fall below certain limits, the resulting low-DO zones can act as a barrier to fish migration and potentially adversely affect spawning success. In extreme cases, persistent low concentrations of DO can result in mortality of benthic organisms and other less-

mobile aquatic species. The Basin Plan objective for DO in the Sacramento River from the I Street Bridge to the Delta is 7.0 milligrams per liter (mg/L) (Central Valley Regional Water Quality Control Board 2007). The Sacramento River DO concentrations near Hood from 2003 to 2009 are typically 10 mg/L during the storm season and 8 mg/L or more during the dry season when flow is lower (Table 3.3-2).

Water temperature is a critical constituent from the standpoint of aquatic life. The Basin Plan objective requires that the Sacramento River temperature not exceed 68°F from Hamilton City to the I Street Bridge in Sacramento during periods when temperature increases would be detrimental to the fishery. In addition, the Basin Plan objective for temperature also requires that it not deviate more than 5°F from ambient river temperature (Central Valley Regional Water Quality Control Board 2007). During the summer months of July and August, the temperature of the Sacramento at Hood was approximately 71°F (Table 3.3-2). However, this location is downstream of the I Street Bridge, and with the cold water inflow of the American, the I Street Bridge temperature may be within Basin Plan standards. While an unlikely scenario, excessive sedimentation in large quantities could affect the temperature of the Sacramento River.

The potential of hydrogen (pH) is a unit for measuring the concentration of hydrogen ion activity in water and is reported on a scale from 0 to 14. If a solution measures less than 7, it is considered acidic. If a solution measures more than 7, it is considered basic, or alkaline. If a solution measures 7, it is considered neutral. Many biological functions can occur only within a narrow range of pH values. The Basin Plan objective for pH is between 6.5 and 8.5. Furthermore, discharges cannot result in changes of pH that exceed 0.5. The monthly average pH of the Sacramento River from 2003 to 2009 remained stable throughout the year (Table 3.3-2). Construction materials such as concrete or other chemicals could affect the pH of the Sacramento River if a discharge were to occur.

Electrical conductivity (EC) is a measure of the degree to which a given water sample conducts an electrical current. The amount of total dissolved solids (TDS) in water is related directly to EC (i.e., high EC is an indicator of high TDS). TDS and EC are general indicators of salinity and are regulated under the Basin Plan. Basin Plan objectives for EC on the Sacramento River are 340 microSiemens per centimeter (µS/cm). It is clear in Table 3.3-2 that monthly average EC levels in the Sacramento River remain below this threshold.

Table 3.3-2. Monthly Average Physical Data for the Sacramento River at Freeport from 2003 to 2009

Month	Temperature (°F)	pH (Standard)	DO (mg/L)	EC (µs/cm)
January	48.7	7.5	10.5	170
February	50.9	7.4	10.1	170
March	55.3	7.5	9.7	154
April	58.3	7.4	9.6	138
May	64.3	7.4	8.6	145
June	68.8	7.3	8.2	139
July	71.1	7.3	7.9	134
August	71.0	7.4	7.8	156
September	67.9	7.5	8.0	166
October	62.5	7.2	8.6	145
November	55.9	7.4	8.9	186
December	49.5	7.4	10.2	186

Source: California Data Exchange Center (CDEC) data: <http://cdec.water.ca.gov/>.

Groundwater Resources Quality

DWR delineates groundwater basins throughout California under the state's Groundwater Bulletin 118. The WSLIP is located in the Sacramento Valley Groundwater Basin, Yolo Sub-basin (Basin No. 5-21.67). The total surface area of the Yolo Sub-basin is 256,000 acres. The Yolo Sub-basin is bounded on the east by the Sacramento River, on the west by the Coast Range, on the north by Cache Creek, and on the south, by Putah Creek. The sub-basin is roughly bisected by an anticlinal structure, but otherwise it is gently sloping from west to east with elevations ranging from 400 feet at the base of the Coast Range, to close to sea level near the eastern portion of the sub-basin (California Department of Water Resources 2004).

Younger alluvium in the sub-basin consists of flood basin deposits and recent stream channel deposits. Flood basin deposits occur along the eastern margin of the sub-basin. The deposits consist of silts and clay, but along the eastern portion of the sub-basin, the interbedded deposits are connected with deposits of the Sacramento River. Older alluvium generally consists of loose to moderately compacted silt, silty clay, sand, and gravel deposited in alluvial fans during the Pliocene and Pleistocene (California Department of Water Resources 2004).

The anticlinal structure, which is expressed at the surface as the Dunnigan Hills and Plainfield Ridge, impedes subsurface flow from east to west. Subsurface groundwater outflow sometimes occurs from the Yolo Sub-basin into the Solano Sub-basin to the south. Subsurface outflow and inflow also may occur beneath the Sacramento River (California Department of Water Resources 2004).

Groundwater levels in the sub-basin are affected by periods of drought, a result of increased groundwater pumping and less surface water recharge. However, data indicate that the recovery of the aquifer is fast during wet years. Data indicate that long-term trends do not show any significant groundwater decline (California Department of Water Resources 2004). However, there are localized groundwater depressions in the vicinity of the Davis, Woodland, and Dunnigan/Zamora areas. Past studies have shown that the Yolo Sub-basin is subject to overdraft; however, the completion of Indian Valley Reservoir in 1976 provided a significant amount of surface water deliveries to be blended with groundwater in the urbanized areas located in the sub-basin (California Department of Water Resources 2004).

Many studies have been conducted to determine the groundwater storage capacity of the sub-basin. Several of these studies refer to Scott and Scalmanini in their 1975 report, *Investigations of Groundwater Resources, Yolo County*. Groundwater storage capacity for the Yolo Sub-basin can be estimated at 6,455,940 acre-feet for the depths between 20 and 420 feet. Based on the Scott report, groundwater storage in the Yolo Sub-basin in 1974 was estimated at 6,074,220 acre-feet (California Department of Water Resources 2004).

Groundwater quality in the sub-basin is characterized as a sodium magnesium, calcium magnesium, or magnesium bicarbonate type. The quality is considered good for both agricultural and municipal uses, despite the elevated hardness in the basin. The hardness is generally above 180 mg/L calcium carbonate ($CaCO_3$). Selenium and boron are found in high concentrations locally (California Department of Water Resources 2004). TDS range from 107 parts per million (ppm) to 1,300 ppm and average 574 ppm based on Title 22 data obtained from public supply wells (California Department of Water Resources 2004). Localized impairments include elevated concentrations of boron (as high as 2 to 4 ppm) in groundwater along Cache Creek and the Cache Creek Settling Basin area, increased levels of selenium present in groundwater supplies for the city of Davis, and localized areas of nitrate contamination (California Department of Water Resources 2004). Along

the Sacramento River North Levee near Riverbank Road, Bryte Park, and The Rivers site, there is a known groundwater petroleum plume that will be affected by construction activities for The Rivers EIP project. The effects from this construction are evaluated below under The Rivers EIP Environmental Consequences section.

3.3.3 Environmental Consequences

This section describes the environmental consequences relating to surface water quality and groundwater quality for the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion. How effects differ among reaches is discussed as applicable.

3.3.3.1 Assessment Methods

This evaluation of surface water quality and groundwater quality is based on professional standards and information obtained from the Central Valley RWQCB, State Water Board, and DWR. The water quality data obtained from USGS and CDEC were used to determine baseline comparative water quality conditions in the Sacramento River and DWSC.

The key effects were identified and evaluated based on the physical characteristics of the program area and the magnitude, intensity, and duration of activities related to the construction projects that are part of this program.

3.3.3.2 Determination of Effects

For this analysis, an effect pertaining to surface water quality and groundwater quality was considered analyzed under CEQA and NEPA if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.):*

- violate water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with ground water recharge;
- substantially degrade water quality; and
- alter regional or local hydrology resulting in substantial increases in erosion or sedimentation.

3.3.3.3 Effects and Mitigation Measures

3.3.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance would continue. No construction-related effects relating to water quality such as earthmoving that result in increased turbidity, or incidental

releases of construction-related contaminants would occur. Therefore, there would be no effect on surface or groundwater quality resources attributable to the implementation of the No Action Alternative.

However, without levee improvements, there is the continued risk of levee failure and continuing under seepage and loss of levee foundation soils would be expected to continue. If a levee overtopping or breach were to occur, floodwaters could be pumped back over levees or recede back through the levee breach into the Sacramento River, DWSC, or the Yolo or Sacramento Bypasses. Flooded areas may contain contaminants from stored chemicals, septic systems, and flooded vehicles—all of which would be released into floodwaters and subsequently contaminate the Sacramento River and the Delta surface waters and potentially soil and groundwater. These contaminants would likely exceed acceptable established water quality standards and impair beneficial uses of the Sacramento River and Delta, including downstream drinking water intakes. A catastrophic levee failure could result in collapse of miles of levee slopes and alteration of regional and local hydrology that would result in substantial increases in erosion and sedimentation. Loss of eroded levee foundation and eroded topsoil from inundated areas would increase turbidity and total dissolved solids in the Sacramento River and ultimately, the Delta; again, impairing beneficial uses. Furthermore, if a levee breach were to occur, emergency construction and repair activities would be implemented without the use of best management practices and could result in the release of hazardous construction materials such as oil and other petroleum related products.

3.3.3.3.2 Flood and Recreation Program Alternatives

Effect WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids

Program actions would require construction-related earth-disturbing activities that potentially cause erosion and sedimentation to adjacent water bodies according to levee reach. Some flood program alternatives could cause greater erosion in comparison with others. For example, the full levee raise involves the greatest amount of earth-disturbing activity and placement of embankment fill material and, as a result, could cause more erosion than the adjacent levee raise. Furthermore, some activities such as rock slope protection or slope flattening may require in-water work that could result in greater sedimentation and increased turbidity in comparison to flood control activities that are primarily landside. Because this type of construction would occur close to the Sacramento River, DWSC, Yolo or Sacramento Bypass, depending on the reach, sedimentation and turbidity could occur in those water bodies. Two environmental commitments (see Section 2.9 of Chapter 2, Alternatives) are included in the program that would reduce the likelihood that this effect would occur, or reduce the effect should it occur. These commitments include the development of the SWPPP and monitoring of turbidity during construction activities. Site-specific erosion control measures would be developed as part of a SWPPP, a requirement of the NPDES General Construction Permit. A SWPPP typically contains, but is not limited to, the following described best management practices:

- **Timing of construction.** Conduct earthwork during the typical construction season.
- **Staging of construction equipment and materials.** Stage construction equipment and materials on the landside of the subject levee reaches. To the extent possible, stage equipment and materials in areas that already have been disturbed.

- **Soil and vegetation disturbance.** Minimize ground and vegetation disturbance during construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations.
- **Grading spoils.** Stockpile soil and grading spoils on the landside of the subject levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If necessary, cover stockpiles with geotextile fabric to provide protection against wind and water erosion.
- **Sediment barriers.** Install sediment barriers on graded or otherwise-disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters.
- **Site stabilization.** Install native plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials may include an erosion control seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and a mulch tackifier, may be installed as needed to stabilize disturbed areas until vegetation becomes established.

As part of a turbidity monitoring program, the city or its contractor will monitor turbidity in the adjacent water bodies, where applicable criteria apply, to determine whether turbidity is being affected by construction and ensure that construction does not result in a rise in turbidity levels above ambient conditions, in accordance with the Central Valley RWQCB Basin Plan turbidity objectives. The monitoring program will include monitoring ambient turbidity conditions upstream and 200 feet downstream of construction activities. Grab samples will be collected at a downstream location that is representative of the flow near the construction site. If there is a visible sediment plume being created from construction, the sample should represent this plume. Monitoring should occur hourly when construction encroaches into the Sacramento River. If construction does not encroach into the river, the monitoring should occur once a week on a random basis.

If turbidity limits exceed Basin Plan standards, construction-related earth-disturbing activities will slow to a point that results in alleviating the problem. WSAFCA or its contractor will notify the Central Valley RWQCB of the issue and provide an explanation of the cause. The implementation of these environmental commitments would reduce any potential effects to a less-than-significant level.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The extent of this effect could be greater at those reaches where both flood and recreation program alternatives would be implemented, i.e., the Sacramento River North and South Levees, Port North and South Levees, South Cross Levee, DWSC East Levee, and Yolo and Sacramento Bypass Levees. There is an unnamed drainage ditch that runs the length of the South Cross levee and a small forebay and pump station on the easternmost side near the DWSC; water is pumped from the drainage ditch to the DWSC. Therefore, any effects on water quality to the unnamed drainage ditch could result in indirect effects on the DWSC.

Effect WQ-1 Finding	With Mitigation
Less than significant	N/A

Effect WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials

Program actions may involve storage, use, or discharge of toxic and other harmful substances near the Sacramento River and other water bodies (or in areas that drain to these water bodies). Construction activities would involve the use of heavy equipment, cranes, compactors and other construction equipment that uses petroleum products (e.g., fuels, lubricants, hydraulic fluids, coolants). All of these materials may be toxic to fish and other aquatic organisms. An accidental spill or inadvertent discharge of these materials could affect the water quality of the river or water body.

For some flood alternatives there could be greater potential for construction-related hazardous materials to enter adjacent water bodies. For example, rock slope protection requires an excavator to place riprap into the adjacent water body, therefore the proximity of construction equipment to the water would be closer than it would be for an adjacent levee raise.

There are three environmental commitments included in the program that would reduce the effect of such a release should it occur or reduce the likelihood that a release would occur. These environmental commitments include the development of the SWPPP, SPCCP and a bentonite slurry spill contingency plan (BSSCP). Typical elements of the SWPPP are described above under Effect WQ-1. All three environmental commitments are described in detail in Section 2.9 of Chapter 2, Alternatives, and are summarized below.

An SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. WSAFCA or its contractor will develop and implement an SPCCP to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that would be taken in the event of a spill (e.g., an oil spill from engine refueling would be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures and spill response kits. It will also describe how and when employees are trained in proper handling procedure and spill prevention and response procedures.

A BSSCP is typically developed for activities that involve the use of bentonite materials (e.g., the construction of slurry walls). The BSSCP is intended to minimize the potential for a frac-out associated with excavation and tunneling activities, provide for timely detection of frac-outs, and ensure and "minimum-effect" response in the event of a frac-out and release of excavation fluid (i.e., bentonite used for the construction of slurry walls).

Release of contaminants into adjacent water bodies could result in significant effects. Adherence to these environmental commitments and the implementation of Mitigation Measure WQ-MM-1 should spills occur would reduce this effect to less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. There is an unnamed drainage ditch that runs the length of the South Cross levee and a small forebay and pump station on the easternmost side near the DWSC; water is pumped from the drainage ditch to the DWSC. Therefore, any effects on water quality to the unnamed drainage ditch could result in indirect effects on the DWSC.

Effect WQ-2 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality

If an appreciable spill has occurred and results determine that program activities have significantly affected surface or groundwater quality, a detailed analysis will be performed by a registered environmental assessor or professional engineer to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination.

Based on this analysis, the City and its contractors will select and implement measures to control contamination, with a performance standard that surface water quality and groundwater quality must be returned to baseline conditions.

Effect WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation

Trenching and excavation associated with all of the flood alternatives (particularly slurry walls) may reach a depth that could expose the water table, in which case an immediate and direct path to the groundwater basin would become available for contaminants to enter the groundwater system. Alternatively, if an adjacent water body (e.g., the Sacramento River) is encroached during grading, a direct path would be created for contaminants to transfer to the groundwater table and vice versa. Primary construction-related contaminants that could reach groundwater include increased sediment, oil and grease, and hazardous materials.

In addition, while dewatering of the construction area (e.g., trenches dug for slurry wall construction that may be filled with groundwater) is not expected to occur to implement the flood program alternatives, if it became necessary, it could result in the release of contaminants to surface or groundwater.

Currently there is a known groundwater contaminated area near The Rivers EIP project area (Figure 3.3-1). The plume is a result of the operation of petroleum-related refueling activities by DWR. DWR is currently monitoring the plume to determine the flow patterns of the plume and to ensure minimal effects on any drinking water wells in the area. There are no other known groundwater contaminated plumes in the program area. The leaking storage tanks were discovered in 1994 and have since been fixed (California Department of Water Resources 2009). More detail on this plume is discussed below in Section 3.3.5.3, The Rivers EIP Environmental Consequences section.

The implementation of flood and recreation program alternatives is not expected to require digging or trenching at depths where groundwater aquifers utilized for drinking water occur. The alternative that may require the greatest depth of trenching or digging is the slurry wall. If trenching activities were to incidentally reach a groundwater aquifer utilized for drinking water, the slurry wall material is relatively benign and would not remain in a liquid state long enough to allow for significant lateral movement within the aquifer.

As discussed in Section 3.17, Public Health and Hazards, prior to all construction activities, the WSAFCA will complete Phase I and, if necessary, Phase II Environmental Site Assessment Investigations that will include analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations. If hazardous substances are found, WSAFCA or its contractor will implement required measures for the proper transport and disposal of such materials in accordance with the appropriate local, state and Federal laws and regulations.

Effect on groundwater and drinking water quality from operation and construction could be significant. The proposed program would adhere to environmental commitments of the SWPPP, the SPCCP, and the BSSCP, as summarized above under Effects WQ-1 and WQ-2. Adherence to those environmental commitments and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2 would reduce this effect to less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would affect all nine program reaches.

Effect WQ-3 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Before discharging any dewatered effluent to surface water, the City or its contractors will obtain a Low Threat Discharge and Dewatering NPDES permit from the Central Valley RWQCB. Depending on the volume and characteristics of the discharge, coverage under the Central Valley RWQCB's NPDES General Construction Permit or General Dewatering Permit is possible. As part of the permit, the permittee will design and implement measures as necessary so that the discharge limits identified in the relevant permit are met. For example, if dewatering is needed during the construction of the slurry wall at The Rivers EIP project area, then the Low Threat Discharge and Dewatering NPDES permit would require proper disposal of the water due to the known petroleum plume present in the area. As a performance standard, these measures will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. Implemented measures may include the retention of dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by the City.

The City will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. The City or its agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and

PLATE 2

SACRAMENTO RIVER

PROPOSED SLURRY CUT-OFF WALL/SHEET PILE WALL

GROUNDWATER FLOW

RIVERBANK ROAD

BRYTE PARK

RIVERBANK ELEMENTARY SCHOOL

BRYTE ELEMENTARY SCHOOL

JASMINE AVENUE

MYRTLE AVENUE

SMILAX AVENUE

CARRIE STREET

BRYTE AVENUE

Former Refueling Area

Qa Qaf Qal

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-9 MW-10 MW-11 MW-12 MW-13 MW-14 MW-15

PW-1 PW-2 PW-3 PW-4 PW-5 PW-6

PCPT 34 PCPT 35 PCPT 36 PCPT 37 PCPT 38 PCPT 39 PCPT 40 PCPT 41 PCPT 42 PCPT 43 PCPT 44 PCPT 45 PCPT 46 PCPT 47 PCPT 48 PCPT 49 PCPT 50 PCPT 51 PCPT 52 PCPT 53 PCPT 54 PCPT 55 PCPT 56 PCPT 57 PCPT 58 PCPT 59 PCPT 60 PCPT 61 PCPT 62 PCPT 63 PCPT 64 PCPT 65 PCPT 66

EXPLANATION:

Qaf	ARTIFICIAL FILL
Qa	ALLUVIAL DEPOSITS, HOLOCENE
Qal	ALLUVIAL DEPOSITS, UNDIVIDED (HOLOCENE AND PLEISTOCENE)
MW-4	MONITORING WELL
MW-7	PROPOSED GROUNDWATER MONITORING WELL
PW-1	PRIVATE, DOMESTIC WELL
BRYTE PLUME	DASHED LINE DENOTES APPROXIMATE LOCATION OF GROUND WATER CONTAMINATION
? ?	GEOLOGIC CONTACT; DASHED WHERE INFERRED QUERIED WHERE UNCERTAIN
PCPT 40	APRIL–MAY 2007 PIEZOCONE PENETRATION TESTING LOCATION RED DOT DENOTES PHASE 2 EXPLORATION
1	JUNE 2006 PIEZOCONE PENETRATION TESTING LOCATION
8+00	DENOTES STATIONING

Geologic Map Reference: Geologic Map of Late Cenozoic Deposits of the Sacramento Valley and Northern Sierra Foothills, California 1:62,500, USGS Map File MF-1790

Drawing Number PG-HQ1-47

GRAPHIC SCALE
100 0 50 100 200 400
(SCALE TO FEET)

DATUM: NAD83, NAVD88, ZONE 2 U.S. FEET

Source: California Department of Water Resources

STATE OF CALIFORNIA
THE RESOURCES AGENCY

DEPARTMENT OF WATER RESOURCES

DIVISION OF ENGINEERING
PROJECT GEOLOGY SECTION

SACRAMENTO MAINTENANCE YARD
WEST SACRAMENTO

QUARTERLY MONITORING REPORT
MONITORING WELL LOCATIONS AND
EXTENT OF GROUNDWATER CONTAMINATION

RELEASE DATE:

SHEET NO.
1 OF 1

00875.07 West Sac Program EIR/Groundwater Plume (11-09) SS

Figure 3.3-1
Groundwater Plume

maintained. The City will notify its contractors immediately if there is a non-compliance issue and will require compliance.

Section 3.4

Geology, Seismicity, Soils, and Mineral Resources

3.4.1 Introduction

This section describes the regulatory and environmental setting for geology, seismicity, soils, and mineral resources; the effects on geology, soils, and mineral resources that would result from the program; and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed and briefly described below.

- Maps and reports prepared by the USGS, California Geological Survey, Natural Resources Conservation Service, and the California Division of Mines and Geology
- *Yolo County General Plan* (Yolo County 2002)
- *Solano County General Plan* (Solano County 2008)
- *City of West Sacramento General Plan* (City of West Sacramento 2004a)
- *Problem Identification Report* (HDR, Inc. on behalf of the City of West Sacramento 2008)

3.4.2 Affected Environment

3.4.2.1 Regulatory Setting

3.4.2.1.1 State

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code [PRC] Section 2621 *et seq.*), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across faults is strictly regulated if they are sufficiently active and well defined. A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during the Holocene Epoch (considered present time and defined for purposes of the act as approximately the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface using standard professional techniques, criteria, and judgment. (Hart and Bryant 1997.)

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic and geotechnical investigations have been carried out and measures to reduce potential damage incorporated into the development plans.

California Building Standards Code

The State of California's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (24 CCR). The CBSC is based on the Uniform Building Code (UBC) (International Code Council 1997), which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis). For the CBSC, the UBC has been modified for California conditions with numerous, more detailed or more stringent regulations. The CBSC requires that "classification of the soil at each building site shall be determined when required by the building official" and that "the classification shall be based on observation and any necessary test of the materials disclosed by borings or excavations."

In addition, the CBSC states that "the soil classification and design-bearing capacity shall be shown on the [building] plans, unless the foundation conforms to specified requirements." The CBSC provides standards for various aspects of construction, including excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, certain aspects of the program would be required to comply with all provisions of the CBSC.

California Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act of 1975 (SMARA) (PRC Sections 2710–2719) is the principal legislation addressing mineral resources in California. SMARA was enacted in response to land use conflicts between urban growth and essential mineral production. Its stated purpose is to provide a comprehensive surface mining and reclamation policy that will encourage the production and conservation of mineral resources while ensuring that:

- significant environmental effects of mining are prevented or minimized;
- mined lands are reclaimed and residual hazards to public health and safety are eliminated; and
- consideration is given to recreation, watershed, wildlife, aesthetic, and other related values.

SMARA governs the use and conservation of a wide variety of mineral resources, although some resources and activities are exempt from its provisions, including excavation and grading conducted for farming, construction, or recovery from flooding or other natural disaster.

SMARA provides for the evaluation of an area's mineral resources using a system of mineral resource zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource. The MRZ classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data; and socioeconomic factors such as market conditions and urban development patterns. The MRZ classifications are defined as follows.

- **MRZ-1**: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- **MRZ-3:** Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4:** Areas where available information is inadequate for assignment into any other MRZ.

The State of California is responsible for mineral resources zoning under SMARA, but SMARA implementation and enforcement authority rests with the local jurisdiction and is carried out through the county or city land use planning process and codes. Yolo County's SMARA implementing regulations are contained in Chapter 3 of Title 10 of the County Code. Solano County's SMARA implementing regulations are contained in Chapter 29 of the County Code.

3.4.2.1.2 Local

Yolo County

The Health and Safety Element of the *Draft 2030 Countywide General Plan* for Yolo County (Yolo County 2008) contains goals, policies, and actions aimed at reducing the risk of geologic or seismic hazards in the county. Any violation of these goals, policies, and actions would constitute a significant effect.

Goals

Goal HS-1 Geologic and Seismic Hazards: Protect the public and reduce damage to property from earthquakes and other geologic hazards.

Policies

Policy HS-1.1: Regulate land development to avoid unreasonable exposure to geologic hazards.

Policy HS-1.2: All development and construction proposals shall be reviewed by the County to ensure conformance to applicable building standards.

Policy HS-1.3: Require environmental documents prepared in connection with CEQA to address seismic safety issues and to provide adequate mitigation for existing and potential hazards identified.

Actions

Action HS-A1: Require a geotechnical analysis for construction in areas with potential geological hazards and/or for purposes of environmental analysis. Recommendations of the geotechnical analysis shall be implemented.

Action HS-A2: Rely upon the most current and comprehensive geological hazard mapping available in the evaluation of potential seismic hazards associated with proposed new development.

Action HS-A3: Continue to participate in the Yolo County Subsidence Network and implement its recommendations.

Solano County

The Public Health and Safety Chapter of the *Solano County General Plan* (Solano County 2008) contains goals, policies, and implementation programs aimed at reducing the risk of geologic or seismic hazards within the county. Any violation of these goals, policies, and implementation programs would constitute a significant effect.

Policies

HS.P-12: Require new development proposals in moderate or high seismic hazard areas to consider risks caused by seismic activity and to include project features that minimize these risks.

HS.P-13: Review and limit the location and intensity of development and placement of infrastructure in identified earthquake fault zones.

HS.P-14: Identify and minimize potential hazards to life and property caused by fault displacement and its effect on facilities that attract large numbers of people, are open to the general public, or provide essential community services and that are located within identified earthquake fault zones.

HS.P-15: Reduce risk of failure and reduce potential effects of failure during seismic events through standards for the construction and placement of utilities, pipelines, or other public facilities located on or crossing active fault zones.

HS.P-16: Require minimum setbacks for construction along creeks between the creek bank and structure, except for farm structures that are not dwellings or places of work, based on the susceptibility of the bank to lurching caused by seismic shaking.

HS.P-17: Restrict the crossing of ground failure areas by new public and private transmission facilities, including power and water distribution lines, sewer lines, and gas and oil transmission lines.

HS.P-18: Make information about soils with a high shrink-swell potential readily available. Require proper foundation designs in these areas.

HS.P-19: Minimize development in areas with high landslide susceptibility.

Regulations

HS.I-18: Revise the County Zoning Ordinance to do the following:

- Limit development occurring in geologic hazard areas, including active fault traces and fault zones, landslide susceptibility zones, and creek banks susceptible to lurching.
- Prohibit structures in active fault trace areas. Per the Alquist-Priolo Earthquake Fault Zoning Act, structures for human occupancy must be set back at least 50 feet from active fault traces.
- Further limit development intended for human occupancy within 100 feet of active fault trace areas to one-story wood-frame structures.

HS.I-19: Adopt and enforce the most current versions of the International Building Codes, as modified by the California Building Standards Commission.

HS.I-20: Create or modify design requirements for new utilities which will guide the construction and placement of these utilities.

HS.I-21: Require geotechnical investigation and recommendations for buildings meant for public occupancy within geologic hazard areas. A state certified

Engineering Geologist shall produce a report examining development issues that considers:

- soil, slope, or other geologic hazard conditions found on site;
- potential off-site development effects, such as increased runoff and/or slope instability; and
- requirements of any regulations concerning the hazard area.

HS.I-22: Require geotechnical evaluation and recommendations before new development in moderate or higher-hazard areas. Such geotechnical evaluation shall analyze the potential hazards from:

- landslides
- liquefaction
- expansive soils
- steep slopes
- erosion
- subsidence
- Alquist-Priolo Earthquake Fault Zones or other identified fault zones
- tsunamis
- seiches

Require new development to incorporate project features that avoid or minimize the identified hazards. Costs related to providing or confirming required geotechnical reports will be borne by the applicant.

HS.I-23: Require owners of all existing or proposed oil, gas, water, and sewer pipelines that cross active faults to file an operations plan describing the probable effects of pipeline failure at the fault and the various emergency facilities and procedures that exist to ensure that failure does not threaten public safety.

HS.I-24: Provide current data to the public regarding geologic hazards. Coordinate with cities to gather and periodically assess new geologic data including fault zone activity, landslide activity, and distribution of shrink-swell soils.

HS.I-25: Develop a geologic constraints and hazards database to be maintained in the County geographic information system (GIS). The GIS shall be used to identify areas containing hazards and constraints that could potentially affect the type or level of development allowed in these areas. Make these data available to the public. Information maintained as part of the database may include:

- active faults

- relative seismic shaking hazards
- relative landslide susceptibility
- relative earthquake induced liquefaction susceptibility
- steep-slope constraints
- moderate and high-erosion hazards
- soils with high clay content indicating shrink swell potential
- agricultural soils and/or bay mud subject to high water levels
- extreme, very high, and high wildfire risk using the Wildland Fire Hazard Areas map provided by the California Department of Forestry and Fire Protection

City of West Sacramento General Plan

In 1990, the City of West Sacramento adopted the *City of West Sacramento General Plan*. The plan was last revised and adopted on December 8, 2004. The *City of West Sacramento General Plan* outlines goals and policies related to natural resources within the study area. The following objectives, policies, and implementation procedures are relevant to the study area.

Health and Safety

Goal A: To prevent loss of life, injury, and property damage due to geologic and seismic hazards.

Policy

1. The City shall require preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction.
2. Underground utilities, particularly water and natural gas mains, shall be designed to withstand seismic forces.
3. The City shall require post-earthquake building replacement, reconstruction, and rehabilitation to conform to the latest City code requirements.

Grading and Erosion Control Ordinances

Many counties and cities have grading and erosion control ordinances. These ordinances are intended to control erosion and sedimentation caused by construction activities. A grading permit typically is required for construction-related projects in West Sacramento. As part of the permit, the project applicant usually must submit a grading and erosion control plan, project vicinity and site maps, and other supplemental information. Standard conditions in the grading permit include an extensive list of BMPs similar to those contained in an SWPPP.

The City's relevant regulations can be found in the Municipal Code, Title 15 (City of West Sacramento 2004b). Chapter 15.08 establishes standards and procedures for grading and excavation to minimize hazards to life and limb; protect against erosion; maintain the natural environment; and protect the safety, use, and stability of public rights-of-way and drainage channels. It ensures that projects approved under this chapter will be free from harmful effects of runoff, including inundation and erosion, and that neighboring and downstream properties will be protected from

drainage problems resulting from new developments. It also ensures proper restoration of vegetation and soil systems disturbed by grading or fill activities authorized under this chapter. It is intended through this chapter to maintain an attractive and healthy landscape and to control against dust and erosion and their consequent effects on soil structure and water quality.

Solano County has adopted the 1997 UBC and 2001 CBSC, including the optional appendices that regulate earthwork. The County's grading codes (also referred to as the Grading, Drainage, Land Leveling and Erosion Control Ordinance) are contained in Chapter 31 of the County Code. The County requires grading permits for most earthwork, with the exception of the following actions.

- Small excavations and fills (those with no more than 8,000 square feet disturbed, an excavated volume less than 150 cubic yards, a finished depth less than 4 feet, and slopes no steeper than 2:1).
- Landscaping of areas smaller than 10,000 square feet.
- Excavation for structures—such as pools, basements, and septic tanks—that typically are covered through other permit processes.
- Permitted land leveling for agricultural purposes.
- Agricultural activities on previously graded or leveled lands.
- Utility trenches, wells, and exploratory excavations by licensed personnel.
- Activities in disposal areas, landfills, quarries, stockpiles, and other operations where a County Use Permit has been granted.
- Grading for fire roads and firebreaks.
- Grading by Solano County or Special Districts; grading for projects on state- or federally owned or operated lands.

Mineral and Energy Resources

The Resources Element of the *Solano County General Plan* (Solano County 2008) recognizes the economic importance of the county's mineral resources and contains policies (Policy RS.P-32) to ensure the following:

- areas with important mineral resources are zoned and developed in ways that maintain resource availability;
- mineral extraction activities are performed in a manner that is compatible with surrounding land uses;
- significant environmental effects of extractive activities are avoided; and
- mined sites are properly restored following closure, consistent with SMARA requirements and surrounding land uses.

General plan policies regarding natural gas resources differ somewhat from those for non-fuel mineral resources. The general plan recognizes the past and current importance of natural gas in Solano County but also stresses that natural gas has a limited lifespan as an alternative to other fossil fuels. General Plan Policy RS.P-54 identifies the importance of "responsible extraction, storage, and transportation of natural gas resources" to "minimize the effect on the natural environment." (Solano County 2008.)

3.4.2.2 Environmental Setting

This section discusses the existing conditions related to geology, seismicity, soils, and mineral resources in the study area.

3.4.2.2.1 Study Area

Regional Physiographic Setting of the Study Area

The study area is located in the southern portion of the Sacramento Valley within the northern portion of California's Great Valley Geomorphic Province. The Great Valley is a narrow, elongated topographic depression that is approximately 450 miles long and 40 to 70 miles wide. The basin is bordered by the Sierra Nevada plutonic complex to the east and the California Coast Ranges to the west, and the Klamath and Cascade Mountains to the north. The Sacramento Valley contains thousands of feet of accumulated fluvial, overbank, and fan deposits resulting from erosion of these surrounding ranges. The sediments vary from a thin veneer at the edges of the valley to 50,000 feet in the west-central portion and are estimated to be about 8,000 feet thick in the study area. (Northwest Hydraulic Consultants 2007.)

The Sacramento River is the main drainage of the region flowing generally south from the Klamath Mountains to its discharge point into the Suisun Bay in the San Francisco Bay Area. In the Sacramento area the Sacramento and American Rivers have been confined by human-made levees since the turn of the 19th century. In the study area, these levees generally were constructed on Holocene age (less than 11,000 years old) alluvial and fluvial deposits deposited by the current and historic Sacramento River and its tributaries. (Kleinfelder 2007.)

Regional Geology and Topography

The surface and subsurface distributions of sandy and clayey deposits are a function of former river positions on the landscape, present-day geomorphic processes adjacent to the river positions on the landscape, and present-day geomorphic processes adjacent to the river channel (i.e., flooding and deposition) (William Lettis & Associates 2007). Helley and Harwood (1985) compiled previous regional studies of the quaternary geology of the Sacramento Valley. Previous geologic mapping in the West Sacramento study area generalized the surficial deposits as Quaternary alluvium (Qa) proximal to the modern river channel and undifferentiated Quaternary basin (Qb) deposits away from the modern river channel. Helley and Harwood (1985) differentiate basin deposits from alluvium on the basis of composition, including only those deposits that are finer-grained and frequently organic-rich, and suggests these deposits were distal deposits where energy conditions were much lower. Both of these map units are considered Holocene age.

Mapping by Helley and Harwood(1985) indicates the entire Sacramento River South Levee is underlain by alluvium and basin deposits. Mapping by Helley and Harwood (1985) also indicates the entire DWSC East and West Levees and Port North and South Levees are underlain by basin deposits with the exception of the Port North Levee Stations 242+00 to 263+57.24 and Port South Levee Stations 1045+00 to 1134+00, which are underlain by peat deposits (Qp) and Stations 996+00 to 1000+00 and 1038+00 to 1045+00 which are underlain by stream channel deposits (Qsc). Peat deposits are decomposing organic deposits with minor inclusions of clay and silt. Stream channel deposits are recent and historic. Alluvial deposits within the active river channel, generally

consisting of unconsolidated sand, gravel, and silt. Other quaternary sediments exposed near West Sacramento in smaller inclusions are described as (Kleinfelder 2007):

- undivided older alluvium deposits (Qal): undivided gravel, sand, and silt deposited during the Holocene and Pleistocene;
- Modesto formation (upper and lower member) (Qmu and Qml): unconsolidated, unweathered to slightly weathered gravel, sand, silt, and clay (the stream channel, alluvial, basin, and peat deposits lie conformably above this unit); and
- Riverbank formation (upper and lower member) (Qru and Qrl): unconsolidated but compact to semi-consolidated, dark brown to red gravel, sand, and silt with some clay.

The Qru/Qrl and the Qmu/Qml deposits represent ancestral river channels and alluvial fans. These semi-consolidated to unconsolidated deposits are characterized by localized paleochannels and lateral and vertical stratigraphic complexity related to past fluvial processes and buried paleo-topography. These formations are mantled by unconsolidated deposits of Holocene age that comprise most of the surficial geologic deposits within the West Sacramento area. Deposits laid down by the Sacramento River between the mid- to late 1800s probably were derived from hydraulic mining debris. (William Lettis & Associates 2007.)

3.4.2.2.2 Soils

Soil map units of the study area as described by the *Soil Survey of Yolo County* (Andrews 1972) and Soil *Survey of Solano County* (Bates1977) are shown on Figure 3.4-1 and characterized in Table 3.4-1. Soil characteristics shown on the table can be summarized as follows.

- Soils that dominate the study area generally have a sandy surface layer and as such have rapid permeability. Erodibility is low in areas that exhibit flat topography, such as the landside of the levee. The hazard of erosion on the steeper levee banks is greater. Additionally, erosion hazard on the waterside of the levee varies with the frequency of high water events within the Sacramento River, Sacramento and Yolo Bypass, and the DWSC.
- The subsurface (generally deeper than 40 inches) soils present a moderate to high shrink-swell potential (expansion and contraction cycle when wetted and dried).
- Because of the sandy surface layer, natural fertility of nearly all of the study area soils is relatively low; therefore, topsoil may need to be amended after disturbance to reestablish plant cover. Revegetation should be aided by the relatively moderate depth to the water table, which is deep enough to allow good aeration of plant roots but shallow enough to allow roots to have access to groundwater.

Table 3.4-1. Soils in the Study Area

Soil Series Name	Reach	Depth (inches)	USDA Texture	Color	Shrink-Swell Potential	Hydrologic Group	Erosion Hazard	Runoff
Lang sandy loam (La)	Sacramento River West North Levee 2, 7, 8 Port North Levee 9A	0–13	Sandy loam and loamy fine sand	Pale brown	Low	B, drained; C, undrained	None to slight	Very slow
		13–19	Loamy fine sand	Mottled light brownish-gray to brownish-yellow				
		19–60	Stratified fine sand, loamy fine sand, and silt loam	Mottled light gray, gray, reddish-yellow, and light brownish-gray				
Lang sandy loam, deep (Lb)	Sacramento Bypass 6 Yolo Bypass 5 Sacramento River South Levee 1	0–13	Sandy loam and loamy fine sand	Pale brown	Low at 0 to 40 inches, High at 40 to 60 inches	B, drained; C, undrained	None to slight	Very slow
		13–19	Loamy fine sand	Mottled light brownish-gray to brownish-yellow				
		19–40	Fine sand to loamy fine sand	Light brownish gray				
		40–60	Clay to heavy clay	Pale brown				
Lang silt loam (Ld)	Sacramento River South Levee 1	0–10	Sandy loam and loamy fine sand	Pale brown	Low at 0 to 40 inches, High at 40 to 60 inches	B, drained; C, undrained	None to slight	Very slow
		10–16	Silt loam	Mottled light brownish-gray to brownish-yellow				
		16–40	Fine sand to loamy fine sand	Light brownish gray				
		40–60	Clay to heavy silty clay loam	Pale brown				
Riz loam, flooded (Rn)	Yolo Bypass 5	0–10	Loam	Light brownish-gray	Moderate to High	D	None to slight	Very slow
		10–37	Heavy clay loam and clay	Mottled, light brownish-gray, brown and yellowish brown				
		37–69	Clay loam and loam	Mottled, light yellowish-brown				

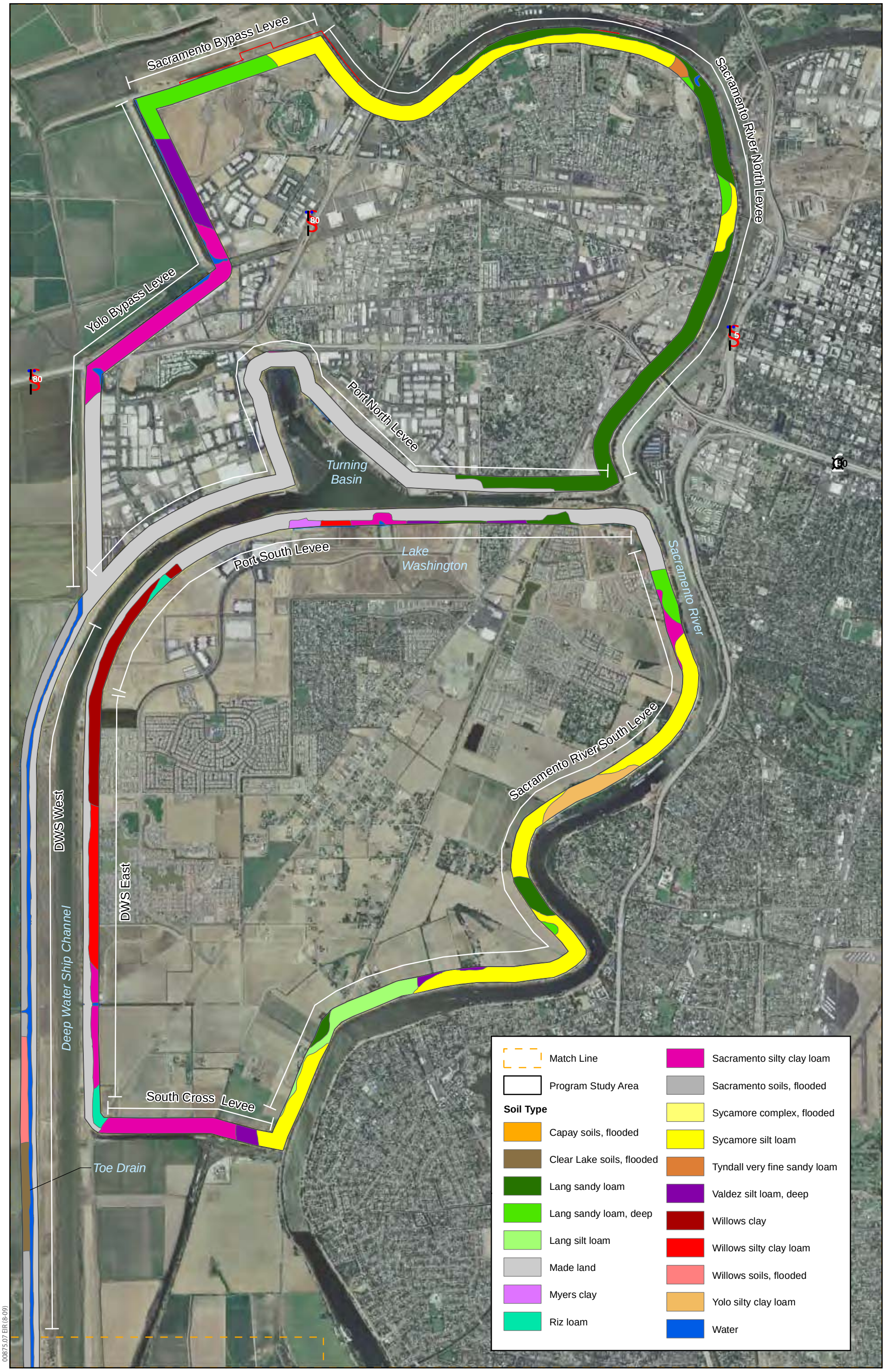


Figure 3.4-1
Soil Types within the Study Area



Figure 3.4-1
Soil Types within the Study Area

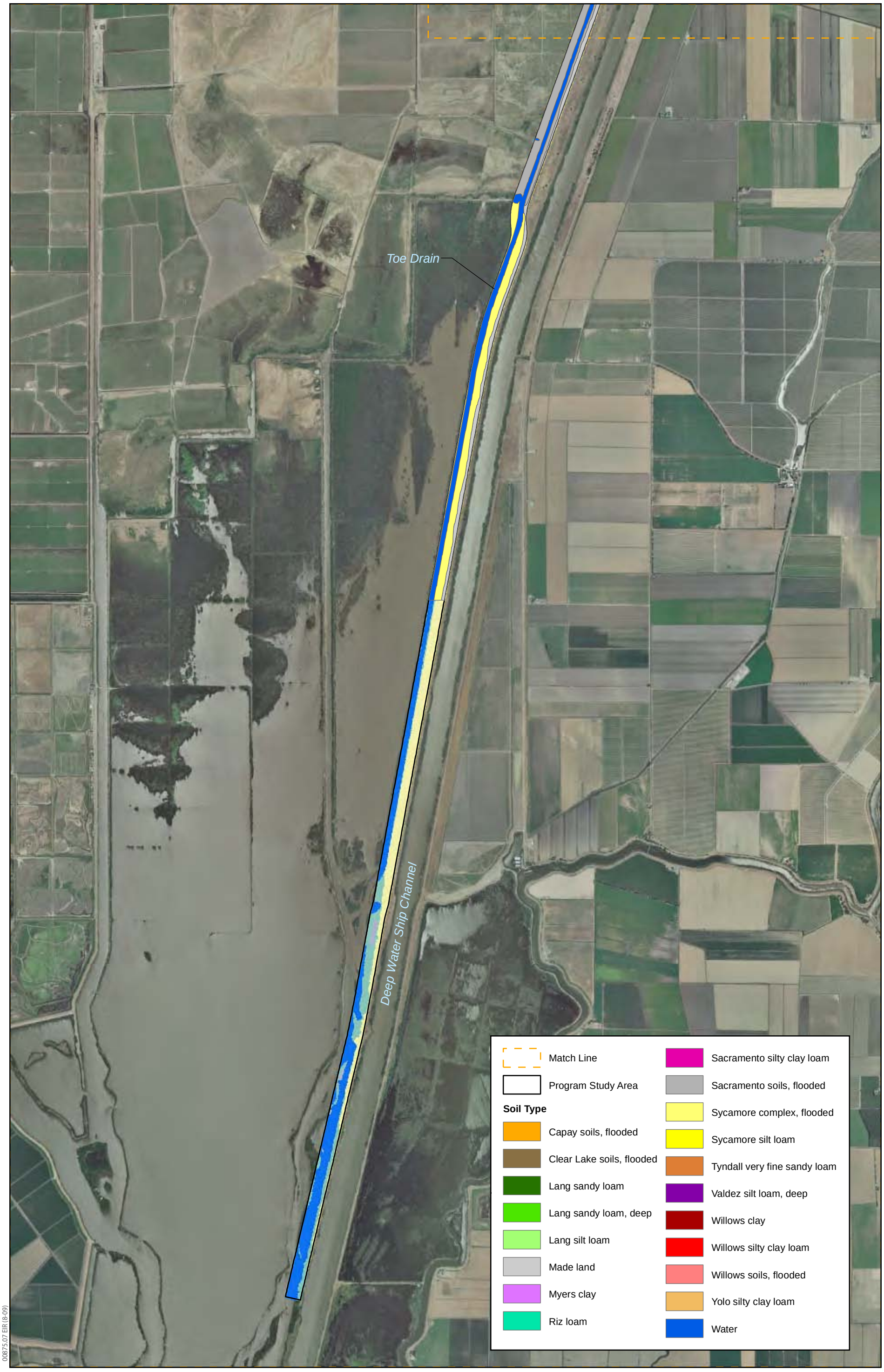


Figure 3.4-1
Soil Types within the Study Area

Soil Series Name	Reach	Depth (inches)	USDA Texture	Color	Shrink-Swell Potential	Hydrologic Group	Erosion Hazard	Runoff
Sacramento silty clay loam (Sa)	Yolo Bypass 5 Port North Levee 9A Sacramento River South Levee 1 South Cross Levee 3	0–20	Silty clay loam	Mottled gray	High	C	None to slight	Very slow
		20–60	Clay	Mottled gray				
Sacramento soils, flooded (Sg)	Yolo Bypass 5	0–8	Silty clay loam	Mottled gray	High	D	None to slight	Very slow
		8–20	Sandy loam to silty clay	Mottled gray				
		20–60	Clay	Mottled gray				
Sycamore silt loam (So)	Sacramento Bypass 6 Sacramento River South Levee 1 South Cross Levee 3	0–14	Silty clay loam or silt loam	Grayish brown	High	C	None to slight	Very slow
		14–30	Silty clay loam	Mottled light yellowish-brown				
		30–60	Loam	Pale olive				
Valdez silt loam, deep (Vb)	Yolo Bypass 5	0–14	Silt loam	Pale brown	High	C	None to slight	Very slow
		14–21	Very fine sandy loam	Light gray				
		21–65	Silt loam	Pale brown and light yellowish-brown				
Made land (Ma)	Made land is a miscellaneous land type that consists of randomly mixed material redeposited by the construction of the Sacramento-Yolo DWSC, turning basin, and navigational locks. There are also a few small areas in which deeps fills have been made in old sloughs. The profile is a stratified, heterogeneous mixture of soil that ranges in texture from sand to clay and in some places consists of uniform texture that ranges from sand to clay and has some gravelly areas. Depth ranges from 5 to 10 feet near the DWSC and up to 15 feet in the vicinity of the turning basin. The surface runoff is very slow, and the erosion hazard is none to slight.							

Sources: Andrews 1972; Bates 1977.

3.4.2.2.3 Mineral Resources

No commercial mining operations are known to have occurred in West Sacramento. Most of the area is classified as MRZ-1 by the California Division of Mines and Geology, which indicates no significant mineral deposits are present. The portion of the West Sacramento area that borders the Sacramento

River (and henceforth the study area vicinity) is classified as MRZ-3, which means aggregate deposits of undetermined significance occur there. Lands classified as MRZ-1 or MRZ-3 are not affected by state policies pertaining to the maintenance of access to regionally significant mineral deposits under the California Surface Mining and Reclamation Act of 1975. However, as indicated in the geotechnical report for the proposed program (Kleinfelder 2007), the study area contains scattered pockets of sand (sand and aggregate being the mineable mineral resources typically found in the program region), in layers and at various depths; therefore, the study area could not be effectively or economically mined and is considered not to contain regionally or locally important mineral resources.

3.4.2.2.4 Seismic Hazards

Seismic hazards refer to earthquake fault ground rupture and ground shaking (primary hazards), as well as liquefaction and earthquake-induced slope failure (secondary hazards). Localized ground shaking and liquefaction are the most significant seismic hazards in Yolo County (Yolo County 1983).

Primary Seismic Hazards—Surface Fault Rupture[1] and Groundshaking

The study area is located in a region of California characterized by low seismic activity. The UBC recognizes no active seismic sources in the program vicinity (International Conference of Building Officials 1997), and no active faults are known to cross the study area. The study area is located within UBC Seismic Hazard Zone 3. The Zone 3 designation indicates that earthquakes in the region have the potential to make standing difficult and to cause stucco and some masonry walls to fall. Structures must be designed to meet the regulations and standards associated with Zone 3 hazards.

Three pre-Quaternary faults/fault zones are located within an approximately 20-mile radius of the study area. The Willows fault zone runs northwest to southeast of the study area; the East Valley fault runs to the west of the study area; and the Midland fault zone runs to the southeast of the study area (City of West Sacramento Department of Community Development 1990; Jennings 1994). None of these faults/fault zones are within an Alquist-Priolo Special Studies Zone (Hart and Bryant 1997). The active fault nearest to the study area is the Dunnigan Hills fault, which is 30 miles to the northwest (City of West Sacramento Department of Community Development 1990; Jennings 1994). This fault is within an Alquist-Priolo Special Studies Zone (Hart and Bryant 1997). The critical earthquake for West Sacramento would originate at the nearest point of the Midland fault zone or the Dunnigan Hills fault (City of West Sacramento Department of Community Development 1990).

Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded at a 10% probability in 50 years (California Geological Survey 2003; Cao et al. 2003), the probabilistic peak horizontal ground acceleration values for the study area are 0.1 to 0.2g (where g equals the acceleration speed of gravity). As a point of comparison, probabilistic peak horizontal ground acceleration values for the San Francisco Bay Area range from 0.4g to more than 0.8g. This indicates that the ground-shaking hazard in the study area is low. Farther to the west, the ground shaking hazard increases, coinciding with the increase in abundance of associated faults and fault complexes (California Geological Survey 2003; Cao et al. 2003).

[1] *Surface fault rupture* is a rupture at the ground surface along an active fault, caused by earthquake or creep activity.

Additionally, URS evaluated northern reaches of the basin for seismic vulnerability and liquefaction of the levees in the report *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region,* dated September 2007.

Preliminary seismic evaluations have been completed in the form of two reports; *West Sacramento Levee System Problem Identification and Alternative*

Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California completed by Kleinfelder (September 2007) and *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* completed by URS (November 2007) for DWR. Data collection included 323 borings drilled with SPTs and soundings made using CPTs along the levees within the basin. Approximate stationing endpoints have been determined by URS and Kleinfelder based on similar soil characteristics within the endpoints (HDR, Inc. 2008).

Liquefaction

Poorly consolidated, water-saturated fine sands located within 30 to 50 feet of the surface typically are considered the most susceptible to liquefaction. Soils and sediments that are not water-saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction (California Division of Mines and Geology 1997).

URS performed a liquefaction-triggering analysis to evaluate whether any levee or underlying foundation materials potentially would liquefy during the considered earthquake events. Criteria for susceptibility to liquefaction included soil type, liquid limit, plasticity index, water content, and fines content. If the material was considered to be susceptible to liquefaction, steps were completed to further evaluate the liquefaction potential of the material considering the earthquake loading. In contrast, if the plasticity of the material was high enough to preclude liquefaction, the material was classified as non-liquefiable, irrespective of the earthquake loading. (URS 2007.)

Four of the nine levee reaches in the study area may exhibit liquefaction during a seismic event. These levee reaches are Sacramento River North, Sacramento Bypass, Yolo Bypass, and Sacramento River South. (HDR, Inc. 2008.)

3.4.3 Environmental Consequences

This section describes the geology and soils effects associated with the program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.4.3.1 Assessment Methods

Evaluation of the geology, seismicity, and soils effects in this section is based on the information provided by technical maps, reports, and other documents that describe the geologic, seismic, and soil conditions of the study area. This information was then compared to the type and location of proposed flood and recreation alternatives to determine whether effects would occur.

3.4.3.2 Determination of Effects

Criteria for determining the significance of effects related to geology, soils, and mineral resources were developed based on the environmental checklist form in Appendix G of the State CEQA Guidelines (14 CCR 15000 *et seq.*). An effect related to geology, soils, and seismicity was considered significant if it would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
- strong seismic ground shaking;
- seismic-related ground failure, including liquefaction; or
- landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- be located on expansive soil, as defined in Table 18-1-B of the UBC (International Code Council 1997), creating substantial risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater;
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

3.4.3.2.1 Effect Assumptions

The following assumptions were made regarding program effects on geology, seismicity and soils in the study area.

- Fill or borrow material will be obtained from a quarry or other authorized (i.e., permitted) location.
- WSAFCA would conform to the latest CBSC standards, city and county standards, and NPDES requirements.
- There are no active faults, potentially active faults, or Alquist-Priolo Earthquake Fault Zones located in or adjacent to the study area.

3.4.3.3 Effects and Mitigation Measures

3.4.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue. No construction-related effects involving direct ground-disturbing activities or changes to flood control facilities that could result in changes in geology, seismicity, soils, or mineral resources would occur. Therefore, there would be no construction-related effects on these resources attributable to implementation of the No Action Alternative.

Without levee alternatives, there is the continued risk of levee failure and continuing underseepage and loss of levee foundation soil would be expected to continue. If a levee overtopping or breach were to occur, floodwaters would likely erode topsoil which could either be pumped back into the Sacramento River, DWSC, or the Yolo or Sacramento Bypasses, or recede back through the levee breach. A catastrophic levee failure could result in the collapse of miles of levee slopes, alteration of regional and local hydrology and a substantial increase in erosion and sedimentation. This condition would cause severe damage to local soils, areas of scour holes, and eroded and unstable landforms. Moreover, subsequent flooding could occur prior to levee repair that would resulting in additional erosion and loss of topsoil. It is assumed that these effects would be significant; however, given the uncertainty of the occurrence or magnitude of such an event, the effects cannot be quantified based on available information.

Furthermore, the beneficial effects attributable to program implementation such as improved levee stability and decrease of levee bank erosion would not be realized under the No Action Alternative.

3.4.3.3.2 Flood and Recreation Program Alternatives

Effect GEO-1: Effects on Levee Stability

The proposed program would improve the stability of the levees in all nine reaches by further reducing seepage and the potential for seepage-related failures by reducing hydrostatic exit gradients, creating more stable slopes and reducing erosion. Therefore, this effect would be beneficial.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Interior drain	▪ Stability berm
	▪ Jet grouting	▪ Rock slope protection
	▪ Relief wells	▪ Setback levee
	▪ Seepage berm	▪ Vegetation removal

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect GEO-1 Finding	With Mitigation
Beneficial	N/A

Effect GEO-2: Effects on Levee Bank Erosion

Evidence of localized, accelerated erosion caused by wave action and channel flows was identified within the study area. Installation of rock slope protection as proposed would substantially reduce bank erosion rates and improve overall levee stability. Therefore the proposed program would have a beneficial effect on levee bank erosion potential.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative
Flood	▪ Rock slope protection ▪ Vegetation removal

Affected Reaches

Erosion control measures are proposed in the Sacramento South and North Levee reaches, the Port North and Port South Levee reaches, and the DWSC East and West Levee reaches.

Effect GEO-2 Finding	With Mitigation
Beneficial	N/A

Effect GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction

Based on available knowledge of fault location and locations of earthquake epicenters, the risk of groundshaking in the study area is low. Nonetheless, a large earthquake on a nearby fault could cause groundshaking in the study area, which could result in liquefaction or associated ground failure, such as lateral spreading or differential settlement which could in turn result in structural loss, injury, and death.

There are four levee reaches in the program study area that contain soils that may be subject to liquefaction: Sacramento River North and South Levee reaches, and the Sacramento and Yolo Bypass Levee reaches. Implementation of the proposed flood and recreation program elements would not substantially alter the composition of the subject levees or foundation soils or increase their susceptibility to liquefaction. The program does propose the construction of structures to reduce seepage and increase flood control (i.e., slurry walls, sheet pile walls, flood walls) and structures

associated with recreation elements, (trails, parks, and developed water access) that might sustain damage from groundshaking or liquefaction and endanger people during a seismic event.

However, the potential for failure of these structures in the four levee reaches from groundshaking would depend on the degree of levee saturation during an earthquake. A high level of saturation would likely only occur during a major flood event. The probability that a large regional earthquake would occur during a major flood event is relatively low, but such coincidence is not impossible. Nonetheless, because of the relative small likelihood of such coincidental events, and because the expected magnitude of groundshaking from large regional earthquakes is relatively low in the study area, the potential for failure or damage of any of proposed program flood or recreation structures in any of these four reaches from groundshaking and liquefaction is considered to be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

This effect would occur in the Sacramento River North and South Levee reaches and the Sacramento and Yolo Bypass Levee reaches.

Effect GEO-3Finding	With Mitigation
Less than significant	N/A

Effect GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance

The grading, trenching, drilling, and other earthwork that would be conducted during construction of the various levee alternatives would result in substantial ground and vegetation disturbance. These disturbances would increase the hazard of erosion and could temporarily increase erosion and sedimentation rates above existing levels. Because most of the earthwork would be conducted on and immediately adjacent to the subject levee reaches, accelerated erosion and sedimentation resulting from construction-related ground and vegetation disturbance would not result in the loss of appreciable quantities of topsoil resources. In addition, most ground-disturbing activities would

occur during the typical construction season, when conditions are generally dry, further reducing the potential for construction-related erosion.

Site-specific measures that would control erosion would be described in more detail in the SWPPP, which is included in the environmental commitments of the program, described in Section 2.9 of Chapter 2, Alternatives. The SWPPP is a requirement of the NPDES General Construction Permit.

In addition, WSAFCA or its contractor would monitor turbidity in the Sacramento River to determine whether turbidity is being affected by construction and ensure that construction does not affect turbidity levels or acceptable sedimentation loads (as discussed in Section 3.3, Water Quality and Groundwater Resources). With these project-level actions, erosion and sediment-related effects would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect GEO-4 Finding	With Mitigation
Less than significant	N/A

Effect GEO-5: Structural Damage and Injury Resulting from Development on Expansive Soils

According to the soil survey for Yolo County, moderate to high shrink-swell potential (soil expansiveness) exists in the study area within the Sacramento and Yolo Bypass Levee reaches. Additionally, expansive soil and sediments were encountered at various depths below the levees in the study area during geotechnical investigations (Kleinfelder 2007). Expansive soils have the potential to compromise the structural integrity of proposed program elements such as slurry walls, sheet pile walls, flood walls, stop logs, and new recreation trails.

As previously discussed, WSAFCA would require the preparation of a preliminary soil report based on soil borings and, if expansive or weak soils are documented on site, a soils investigation detailing corrective action. These corrective actions likely would prevent structural damage to flood or recreation program alternatives proposed to be constructed on the expansive soils. This effect would significant, but implementation of Mitigation Measure GEO-MM-1 would reduce this effect to less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Jet grouting ▪ Sheet pile wall ▪ Slurry cutoff wall	▪ Closure structure ▪ Flood wall
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect GEO-5 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report

WSAFCA will implement special engineering techniques identified in a project-specific geotechnical report, which may include using reinforced steel and drainage control devices, and/or over-excavating and backfilling with non-expansive soil. WSAFCA or its contractor will select one or more of the recommended measures in consultation with a qualified engineer and the City engineer before construction activities begin.

Effect GEO-6: Decrease in Local Soil Supply Resulting from Demand for Levee Material

The WSLIP activities have the potential to require borrow material for implementing levee improvements at a volume of approximately 6.2 million cubic yards. WSAFCA proposes to obtain borrow material from a local quarry or other authorized (i.e., permitted) location. The total supply available from all existing permitted sources is not known, but borrow material is generally considered in adequate quantities. This effect is considered less than significant based on this assumption and with consideration of the environmental commitment regarding soil supply

protection measures (see 2.9.1.22). This commitment addresses the process that will be followed for use of new sites (such as SMARA compliance, outlined in 3.4.2.1.1) and conservation of topsoil.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full)	▪ Seepage berm ▪ Stability berm ▪ Setback levee
Recreation	▪ Trails	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect GEO-6 Finding	With Mitigation
Less than significant	N/A

Section 3.5
Transportation and Navigation

3.5.1 Introduction

This section describes the affected environment for transportation and navigation, the regulatory setting associated with transportation, the effects on transportation and navigation that would result from the proposed program, and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed below:

- *City of West Sacramento General Plan*, revised December 2004
- *City of West Sacramento General Plan Background Report*, revised June 2000
- *City of West Sacramento Bicycle and Pedestrian Path Master Plan 1995*

3.5.1.1 Terminology

The following are definitions of key traffic and transportation terms used in this section.

- **Level of service (LOS)**: A scale used to determine the operating quality of a roadway segment or intersection based on volume-to-capacity (V/C) ratios or average delay experienced by vehicles on the facility. The levels range from A to F, with LOS A representing free-flow traffic and LOS F representing severe traffic congestion. Agencies adopt LOS standards that define the level of operations that are acceptable within their jurisdiction.
- **V/C ratio**: The number of vehicles that travel on a transportation facility divided by the vehicular capacity of that facility (the number of vehicles the facility was designed to convey).
- **Delay**: The additional travel time experienced by a vehicle or traveler because of inability to travel at optimal speed and/or stops due to congestion or traffic control.
- **Average daily traffic (ADT)**: Average traffic volume on the roadway section during a typical 24-hour day.
- **Annual average daily traffic (AADT)**: AADT is the total traffic volume for the year divided by 365 days.
- **Peak Hour:** This is an estimate of the peak hour traffic at all points on the state highway system.
- **Back and Ahead**: Back AADT, Peak Month, and Peak Hour usually represent traffic south or west of the count location. Ahead AADT, Peak Month, and Peak Hour usually represent traffic north or east of the count location.

Table 3.5-1 summarizes the ranges of V/C values and typical driving conditions for each LOS.

Table 3.5-1. Level of Service Definitions for Urban Streets

LOS	Intersection	Roadways
A	Uncongested operations, all queues clear in a single signal cycle. V/C = 0.00–0.60	Free flow, vehicle unaffected by other vehicles in traffic stream.
B	Uncongested operations, all queues clear in a single signal cycle. V/C = 0.61–0.70	Higher speed range of stable flow. Volume 50% of capacity or less.
C	Light congestion; occasional back-ups on critical approaches. V/C = 0.71–0.80	Stable flows with volumes not exceeding 75% of capacity.
D	Significant congestion of critical approaches, but intersection functional. Cars required to wait though more than one cycle during short peaks. No long queues formed. V/C = 0.81–0.90	Upper end of stable flow conditions. Volumes do not exceed 90% of capacity.
E	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersections upstream of critical approaches. V/C = 0.91–1.00	Unstable flow at roadway capacity. Operating speeds 25 to 30 miles per hour (mph) or less.
F	Total breakdown; stop-and-go traffic operation. V/C > 1.00	Stop-and-go with operating speeds less than 30 mph.

Source: City of West Sacramento 2000.

3.5.2 Affected Environment

3.5.2.1 Regulatory Setting

Transportation analysis in the study area is guided by policies and standards set by local jurisdictions. Because the proposed program is located in the city of West Sacramento, the program should adhere to the adopted City transportation policies.

3.5.2.1.1 Federal

River and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures that cross any navigable water; that place obstructions to navigation outside established Federal lines; and that excavate from or deposit material in such waters. Such activities require permits from USACE. Navigable waters are defined in section 329.4 as:

> Those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which impede or destroy navigable capacity.

In the USACE Sacramento District, navigable waters of the United States in the project area that are subject to the requirements of the River and Harbors Appropriation Act include Sacramento River, American River, the Deep Water Ship Channel, and all waterways in the Sacramento–San Joaquin drainage basin affected by tidal action (U.S. Army Corps of Engineers 2003). Sections of the River and Harbors Act applicable to the proposed program are summarized below.

Section 9

Section 9 (33 USC 401) prohibits the construction of any dam or dike across any navigable water of the United States in the absence of Congressional consent and approval of the plans by the Chief of Engineers and the Secretary of the Army. Where the navigable portions of the water body lie wholly within the limits of a single state, the structure may be built under authority of the legislature of that state, if the location and plans or any modification thereof are approved by the Chief of Engineers and by the Secretary of the Army.

Section 10

Section 10 (33 USC 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters, is unlawful unless the work has been authorized by the Chief of Engineers.

3.5.2.1.2 Local

City of West Sacramento General Plan

Cities and counties use various criteria to determine acceptable LOS on their roadway systems. The Transportation and Circulation Element of the *City of West Sacramento General Plan* contains the following policy that may apply to the proposed program.

Goal A: To create and maintain a roadway network which will ensure the safe and efficient movement of people.

Policy 2: The City shall endeavor to maintain a Level of Service "C" on all streets within the city**,** except at intersections and on roadway segments within one-quarter mile of a freeway interchange or bridge crossing of the Deep Water Ship Channel [DWSC], barge canal, or Sacramento River, where a Level of Service "D" shall be deemed acceptable (City of West Sacramento 2004).

Table 3.5-2 quantifies the acceptable ADT of urban streets for corresponding LOS and roadway width.

Table 3.5-2. LOS Criteria for Roadway Segments

Facility Type	No. of Lanes	Maximum ADT per LOS				
		A	B	C	D	E
Residential	2	600	1,200	2,000	3,000	4,500
Residential collector with access	2	1600	3,200	4,800	6,400	8,000
Residential collector without access	2	6,000	7,000	8,000	9,000	10,000
Arterial, low access control (4+ stops/mile, many driveways, 25–35 mph)	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, moderate access control (2–4 stops/mile, few driveways, 35–45 mph)	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, high access control (1–2 stops/mile, no driveways, 45–55 mph)	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	42,000	48,000	54,000	60,000
Rural, 2-lane highway	2	2,400	4,800	7,900	13,500	22,900
Rural, 2-lane road, 24–36 feet, paved, shoulder	2	2,200	4,300	7,100	12,200	20,000
Rural, 2-lane road, 24–36 feet, paved, no shoulder	2	1,800	3,600	5,900	10,100	17,000

Source: City of West Sacramento 2006.

Policy 8: On-street truck parking shall be prohibited where such parking restricts adequate sight distances or otherwise poses a potentially hazardous situation.

Policy 10: The City shall attempt to confine truck traffic to designated truck routes. The City shall consider the additional weight and turning requirements of trucks in selecting truck routes.

Goal G: To promote pedestrian and bicycle travel as alternatives to automobile use.

Policy 1: The City shall create and maintain a safe and convenient system of pedestrian and bicycle pathways which encourages walking or bicycling as an alternative to driving.

Policy 3: Bicycle routes shall emphasize paths separated from vehicle traffic to the maximum extent possible, but shall also include bicycle lanes within public streets; bikeways may, however, be combined with pedestrian and vehicle routes, where appropriate.

Policy 4: The City shall limit on-street bicycle routes to those streets where the available roadway width and traffic volumes permit safe coexistence of bicycle and motor vehicle traffic.

Policy 7: To the extent practicable, bicycle and pedestrian pathways shall be included within open space areas and adjacent to waterways.

Solano County General Plan

The *Solano County General Plan* outlines policies, goals, and guidelines for project implementation with regards to transportation and circulation within the county. Goals and policies applicable to transportation consist of the following:

Goals

TC.G-1: Maintain and improve the County's transportation systems to enhance safety, resident access to basic needs, mobility, and convenience.

TC.G-2: Promote coordinated approaches to creating, maintaining and improving transportation corridors and facilities by working with other jurisdictions and transportation agencies in funding and implementing projects.

TC.G-3: Encourage land use patterns that maximize access and mobility options for commuting and other types of trips, and minimize traffic congestion, vehicle miles traveled (VMT), and greenhouse gas emissions.

TC.G-4: Encourage the use of alternative forms of transportation such as transit, walking and bicycling to alleviate congestion and promote recreation

Policies

TC.P-1: Maintain and improve current transportation systems to remedy safety and congestion issues, and establish specific actions to address these issues when they occur.

TC.P-3: Establish land use patterns that facilitate shorter travel distances and non-auto modes of travel, and limit the extent of additional transportation improvements and maintenance that may be needed with a more dispersed land use pattern.

TC.P-4: Evaluate proposals for new development for their compatibility with and potential effects on transportation systems.

TC.P-23: Evaluate and monitor the effects of water transportation and port activity on the levee system.

3.5.2.2 Environmental Setting

3.5.2.2.1 Transportation

This section describes the transportation characteristics of the study area, including the surrounding roadway network and transit, pedestrian, and bicycle facilities in the vicinity of the project site.

Roadways

Existing freeways within the study area are described below.

- **Interstate 80 (I-80)** is a major freeway that runs northeast–southwest in the northwestern corner of the city. I-80 and US Highway 50 (US 50) merge on the westbound (WB) lanes heading to San Francisco and split on the eastbound (EB) lanes. After the EB split, I-80 runs northeast toward Reno and connects to the cities on the northern side of the Sacramento metropolitan area.
- **US 50** is a major freeway extending from I-80 in West Sacramento through the city of Sacramento and heading east. US 50 is co-designated as Business 80, also known as the Capital City Freeway, between I-80 and State Route (SR) 99 in the West Sacramento and Sacramento area. In the study area, US 50 is a six- to eight-lane freeway with interchanges at Harbor Boulevard and Jefferson Boulevard and a partial interchange at South River Road.

The following are the major arterial streets that serve the study area.

- **West Capitol Avenue (SR 275)** is an east-west arterial that runs between I-80 near the western city limits of West Sacramento and the Tower Bridge at the Sacramento River. The roadway width varies between two, four, and six lanes.
- **Reed Avenue/Sacramento Avenue/C Street (SR 84)** is an east-west arterial that runs between I-80 near the western city limits of West Sacramento and the I Street Bridge at the Sacramento River. The roadway width varies between two and four lanes.
- **Industrial Boulevard/Lake Washington Boulevard** is a four-lane arterial that serves the West Sacramento area south of US 50/Business 80. The roadway provides a continuous route from Jefferson Boulevard on the east to Enterprise Boulevard on the west, crossing over the Palamidessi Bridge.
- **Linden Road** is an east-west arterial that serves the Southport area of West Sacramento. Linden Road extends from South River Road on the east, crosses Jefferson Boulevard, and intersects Jefferson Boulevard again, approximately 1 mile south of the northern crossing.
- **Jefferson Boulevard (SR 84)** is a major arterial and truck route that extends from Sacramento Avenue to south of city limits. Jefferson Boulevard is a four-lane road from Sacramento Avenue to just south of South Linden Road. The remaining portion of the roadway within the study area is composed of two lanes.
- **Harbor Boulevard** is a north-south arterial that runs through the western portion of the city. The roadway width varies between two and four lanes.
- **Enterprise Boulevard** serves the western industrial area south of I-80 and also serves as an arterial. This roadway is two and four lanes wide and connects to the regional freeway system via an interchange at I-80.
- **Southport Parkway** is an arterial that runs along the western side of the Southport area. This roadway is four lanes wide from Lake Washington Boulevard to Promenade Street, and then narrows down to two lanes until it terminates at Jefferson Boulevard near the southern edge of the city. The road provides access to the residential areas on the western side of Southport.

Local roads that run adjacent to or along the crest of the levees in the study area include Riverbank Road (Sacramento River North Levee), River Crest Drive (Sacramento River North Levee), and South River Road (Sacramento River North Levee and Sacramento River South Levee).

Average Daily Traffic

Table 3.5-3 shows the annual average daily traffic for major segments of I- 80 and US 50 in the study area. These segments of the highway will likely be used for hauling construction supplies for program implementations.

Table 3.5-3. AADT for Highways in the Program Area

Highway	Segment	Back AADT	Ahead AADT
I-80	Junction with US 50	145,000	85,000
I-80	Junction with SR 84 (Reed Avenue)	85,000	90,000
I-80	West El Camino Avenue Interchange	90,000	87,000
US 50	Junction with I-80	–	85,000
US 50	Harbor Boulevard Interchange	85,000	116,000

Source: California Department of Transportation 2009.

Table 3.5-4 displays the ADT counts for streets incorporated into the City's truck route map (Figure 3.5-1) (City of West Sacramento 2007b). Many of these streets would potentially be involved in hauling construction supplies and equipment to the project sites since parts of the proposed program would be spread along the perimeter of the city.

Table 3.5-4. ADT Counts along Hauling Routes

Street	Limits	ADT	A.M. Peak	P.M. Peak	Count Year
Carlin Dr	Oates Dr to Southport Pkwy	113	15	15	2007
Channel Dr	Seaport Blvd to Channel Dr (west end)	1,160	82	115	2007
Embarcadero Dr	Riverside Pkwy (North [N]) to Riverside Pkwy (South [S])	890	57	152	2007
Enterprise Blvd	West Capitol Ave to Seaport Blvd	16,424	1,503	1,516	2004
Enterprise Blvd	Seaport Blvd to Channel Dr	6,118	605	508	2007
F St	Jefferson Blvd to 8th St	2,189	142	184	2007
F St	8th St to 2nd St	1,466	104	141	2007
Harbor Blvd	Rice Ave to West Capitol Ave	15,464	1,050	1,257	2008
Harbor Blvd	Reed Ave to Rice Ave	15,399	869	1,195	2007
Harbor Blvd	West Capitol Ave to Industrial Blvd	30,135	2,413	2,110	2007
Industrial Blvd	Enterprise Blvd to Parkway Blvd	8,036	628	666	2007
Industrial Blvd	Parkway Blvd to Harbor Blvd	20,279	1,626	1,390	2007
Industrial Blvd	Harbor Blvd to Stone Blvd	18,851	1,512	1,581	2008
Jefferson Blvd	Sacramento Ave to West Capitol Ave	21,176	1,773	1,849	2006
Jefferson Blvd	West Capitol Ave to 15th St	33,705	2,199	2,545	2006
Jefferson Blvd	15th St to Stone Blvd	25,503	1,510	2,252	2006
Jefferson Blvd	Stone Blvd to Lake Washington Blvd	34,938	2,396	2,617	2006
Jefferson Blvd	Lake Washington to Linden Rd (S)	19,015	1,322	1,710	2006
Jefferson Blvd	Linden Rd (S) to Davis Rd	34,784	2,439	2,616	2006
Jefferson Blvd	Davis Rd to Southport Pkwy	15,864	1,007	1,233	2006
Jefferson Blvd	Southport Pkwy to city limits (S)	1,359	101	139	2006
Lake Washington Blvd	Stone Blvd to Jefferson Blvd	7,473	382	425	2006
North Harbor Blvd	Riverbank Rd to Reed Ave	4,529	467	484	2007
North Harbor Blvd	City limits to Riverbank Rd	4,801	354	484	2007
Parkway Blvd	Industrial Blvd to South End	3,599	331	367	2007

Street	Limits	ADT	A.M. Peak	P.M. Peak	Count Year
Reed Ave	Riverside Pkwy to Sunset Ave	15,930	1,036	1,229	2005
Riverside Pkwy	Reed Ave to Stillwater Rd	4,330	400	763	2007
Sacramento Ave	Sunset Ave to Kegle Dr	10,437	995	885	2006
Sacramento Ave	Kegle Dr. to 6th St	9,517	541	812	2007
Seaport Blvd	West End to Parkway Blvd	2,103	147	174	2007
South River Rd	West Capitol Ave to Riske Ln	2,621	227	223	2007
South River Rd	Riske Ln to 15th St	6,200	502	574	2007
South River Rd	15th St to southern end of South River Rd	5,487	583	353	2006
South River Rd	Jefferson Blvd to Linden Rd	335	19	32	2007
South River Rd	Linden Rd to Davis Rd	604	41	70	2007
South River Rd	Davis Rd to Gregory Ave	268	17	43	2007
South River Rd	Gregory Ave to city limits	1077	112	118	2007
Southport Pkwy	Ramco St to Lake Washington Blvd	14,435	1,246	1,111	2007
Southport Pkwy	Ramco St to Promenade St	9,275	798	841	2006
Stillwater Rd	Reed Ave to Riverside Pkwy	6,795	802	574	2004
West Capitol Ave	Enterprise Blvd to Northport Dr	6,957	445	611	2005
West Capitol Ave	Northport Dr to Harbor Blvd	13,802	698	1,147	2005
West Capitol Ave	Harbor Blvd to Sycamore St	14,812	780	1,139	2005
West Capitol Ave	Sycamore St to Jefferson Blvd	15,029	799	1,144	2005
West Capitol Ave	Jefferson Blvd to Riske Ln	4,789	298	430	2005
West Capitol Ave	Riske Ln to 3rd St	4,337	251	408	2005
15th St	Jefferson Blvd to S. River Rd	6,086	584	536	2007

Source: City of West Sacramento 2007a.

Level of Service

Table 3.5-5 summarizes existing daily LOS for roadways located within or near the study area. The table shows that under existing conditions, most of roadways are operating within adopted LOS standards. Only one roadway, Jefferson Boulevard, is carrying traffic volumes that are approaching capacity. The existing ADT of Jefferson Boulevard between Arlington and SR 275/US 50 is shown to exceed LOS standards.

Table 3.5-5. Existing Roadway LOS

Roadway	LOS	V/C
West Capitol Avenue, west of Harbor Blvd	A	0.40
West Capitol Avenue, west of Merkley Ave	A	0.55
West Capitol Avenue, west of Jefferson Blvd	A	0.42
West Capitol Avenue, east of Jefferson Blvd	A	0.26
Kegle Drive, north of Sacramento Avenue	A	0.58
Sacramento Avenue, west of Douglas to Kegle Dr	A	0.58
C Street, east of 3rd Street	A	0.31



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Figure 3.5-1
City of West Sacramento Truck Routes

Roadway	LOS	V/C
Harbor Boulevard, south of Sunset Ave	B	0.61
Harbor Boulevard, south of West Capitol Ave	B	0.61
Enterprise Boulevard, south of Lake Rd	B	0.65
Anna Street	A	0.08
Westacre Road	C	0.71
Jefferson Boulevard, south of Arlington Rd	D*	0.82
Jefferson Boulevard, south of Devon Ave	D*	0.09
Jefferson Boulevard, south of Stone Blvd	F*	1.01
Jefferson Boulevard, south of 15th St	E*	0.95
Jefferson Boulevard, south of US 50	A	0.53
Jefferson Boulevard, south of SR 275	C	0.71
Jefferson Boulevard, south of West Capitol Ave	B	0.63
Jefferson Boulevard, south of F Street	A	0.55
Jefferson Boulevard, south of Sacramento Ave	A	0.55
Sacramento Avenue, east of Kegle Dr	A	0.34
Sacramento Avenue, east of Sunset Ave	A	0.24
Sacramento Avenue, east of Harbor Blvd	A	0.20
US 50/Business 80, east of I-80	A	0.41
US 50/Business 80, east of Harbor Blvd	A	0.49
US 50/Business 80, east of SR-275	A	0.52
SR 275, east of US 50/Business 80	A	0.16
SR 275, east of 5th St	A	0.18
SR 275, at Tower Bridge	A	0.53

Source: City of West Sacramento 2000.
* Exceeds adopted LOS standard.

Table 3.5-6 summarizes intersection LOS values that have been calculated for typical a.m. and p.m. peak periods. The following three intersections are shown to exceed LOS standards during both the a.m. and p.m. peak hours:

- Jefferson Boulevard and US 50/Park Boulevard,
- Jefferson Boulevard and Stone Boulevard, and
- Jefferson Boulevard and F Street.

The following three additional intersections are shown to exceed standards only during the p.m. peak hour:

- Sacramento Avenue and Bryte Avenue,
- West Capitol Avenue and SR 275 Ramps, and
- Jefferson Boulevard and SR 275/US 50 WB.

All other intersections located in and near the study area are shown to be operating within the adopted City standards.

Table 3.5-6. Existing Intersection LOS

	A.M. Peak		P.M. Peak	
Roadway	LOS	V/C	LOS	V/C
Reed Avenue at I-80 WB	A	0.09	A	0.41
Reed Avenue at I-80 EB	A	0.27	A	0.40
Reed Avenue/Sacramento at Harbor Boulevard	A	0.27	A	0.38
Sacramento Avenue and Bryte Avenue	C	N/A	E*	N/A
Sacramento Avenue and Jefferson/Kegle Drive	A	0.54	B	0.62
Sacramento Avenue and 5th Street	A	0.25	A	0.31
West Capitol Avenue and Harbor Boulevard	A	0.36	B	0.61
West Capitol Avenue and Westacre Road	A	0.45	A	0.46
West Capitol Avenue and Jefferson Boulevard	A	0.41	B	0.61
West Capitol Avenue and SR 275 Ramps	B	N/A	E*	N/A
West Capitol Avenue and 5th Street	A	N/A	A	N/A
West Capitol Avenue and 3rd Street	A	0.16	A	0.53
Harbor Boulevard and US 50 WB	A	0.44	C	0.75
Harbor Boulevard and US 50 EB	D	0.82	C	0.72
Merkley Avenue and Jefferson Boulevard	A	0.35	A	0.58
Jefferson Boulevard and SR 275/US 50 WB	D	N/A	E*	N/A
Jefferson Boulevard and SR 275 EB on-ramp	C	N/A	C	N/A
Jefferson Boulevard and US 50 EB off-ramp	A	0.34	A	0.38
Jefferson Boulevard and US 50/Park Blvd	F*	1.00	F*	1.15
Jefferson Boulevard and 15th Avenue	B	0.61	B	0.64
Jefferson Boulevard and Stone Boulevard	D*	N/A	E*	N/A
Jefferson Boulevard and Linden Road	C	0.76	A	0.47
Jefferson Boulevard and F Street	E*	N/A	E*	N/A

Source: City of West Sacramento 2000.
* Exceeds adopted LOS standard.

Parking

On-street parking is available on most streets within West Sacramento. The City does not have any public parking lots. Construction projects are subject to off-street parking standards as defined in the City's Zoning Ordinance (City of West Sacramento 2000).

Railroads

The Sierra Northern Railway is the local freight rail operator. The Sierra Northern Railway has a line that runs northwest to Woodland. It also provides rail service to the Port of West Sacramento and the industrial section of West Sacramento. The Sierra Northern Railway handles approximately 8,000 carloads annually, and is used for carrying various commodities. Sierra Northern Railway does have trains that carry passengers; however, these lines are not located within the study area. The Sierra Northern Railway interchanges with both the Union Pacific Railroad (UPRR) and the Burlington Northern Santa Fe Railroad (BNSF). The UPRR and BNSF provide long haul service to and

from the city of West Sacramento. AMTRAK provides passenger rail service to the area; however, although the rail runs through the city, there are no stops in the city limits and the closest stop is in the City of Sacramento (City of West Sacramento 2009b). See Figure 3.5-2 for the layout of rail lines in the city of West Sacramento.

Transit Facilities

The Yolo County Transportation District operates 26 bus routes in Yolo County. Yolobus transit service operates within the city of West Sacramento and provides access to the surrounding communities, including Davis, Winters, Woodland, downtown Sacramento, Sacramento International Airport, Brooks, Cache Creek Casino, Capay, Dunnigan, Esparto, Guinda, Madison, Knights Landing, Rumsey, and Vacaville. It also provides connections to other public transportation systems, including Unitrans, Citylink Amtrak in Davis, and Regional Transit's bus and light rail systems in Sacramento (Yolo County Transportation District 2009).

Bikeways

Bicycle facilities are currently available within the program vicinity. The City has a Bicycle and Pedestrian Path Master Plan, which identifies existing path facilities, opportunities, constraints, destination points, and design standards. As stated in the plan, major arterial roads as well as several minor arterial roads throughout the city have bike lanes or bike-accessible shoulders (City of West Sacramento 1991). The main bikeway in the City is located on West Capitol Avenue, which connects the Sacramento bikeway to the Yolo County bikeway, which then connects to Davis bikeways. Another major route is located on Sacramento Avenue.

The Clarksburg Branch Line Trail is an off-street path that runs south from the Barge Canal down to South River Road near the southern end of the city limits. The Roland Hensley Bike Park lies on the western end of the city limits, just north of I-80, and provides access to the off-street bike path that crosses the Yolo Bypass Levee. Bike accessible areas that run adjacent to or on top of levees include S. River Road south of the Barge Canal, Riverbank Road (Sacramento River South Levee), and N. Harbor Boulevard (Sacramento River North Levee) (City of West Sacramento 2009a).

Airports

Airports in the area are Sacramento International Airport, Sacramento Executive Airport, Mather Airport, and Franklin Field. Sacramento International Airport is Sacramento County–owned and is located approximately 7 miles north of the city of West Sacramento, between Sacramento and Woodland along Interstate 5 (I-5). The Executive Airport is owned by Sacramento County and is located 1.5 miles to the east of West Sacramento, in the city of Sacramento. Mather Field is a cargo airfield located approximately 11 miles east of the city in Rancho Cordova. Franklin Field is owned by Sacramento County and is located approximately 16 miles south of the city in Elk Grove.

3.5.2.2.2 Navigation

Most of the waterways in the immediate vicinity of the city of West Sacramento are public waterways. These public waterways consist primarily of the Sacramento River, the DWSC, and the Barge Canal. USACE, pursuant to the Rivers and Harbors Act, maintains jurisdiction over all navigable waterways (including non-Federal navigable streams, creeks, marshes, and diked lands) and requires a permit for any work within these waterways.

Navigation in the Sacramento River is limited to recreational watercraft (e.g., personal watercraft and small tour boats) because the river is too small and fluctuating water levels prevent the accommodation of large commercial vessels. The DWSC runs from the Delta to the Port of Sacramento, providing commercial shipping access to the Sacramento region. With a water depth of approximately 30 feet, the DWSC is approximately 450 feet across in the section running between the DWSC West and DWSC East levees (City of West Sacramento 2009c).

The Barge Canal connects the DWSC to the Sacramento River. The Barge Canal and navigational lock were originally built to allow recreational, construction, and small commercial vessels to access the Sacramento River from the Port of Sacramento. However, commercial traffic has declined on the Sacramento River and the locks are not currently operational. Silting has occurred on the mouth of the lock on the Sacramento River end of the facility (City of West Sacramento 2009b).

Minor waterways in the area include Bridgeway Lake, Lake Washington, and the Barge Canal Recreational Access. These areas are limited to small recreational watercraft. Bridgeway Lake and Lake Washington are not adjacent to the levees analyzed in this document and would not be affected by the proposed program. The Barge Canal Recreational Access is located between the Port South Levee and the Port North Levee west of the Stone Locks.

The Broderick Boat Ramp is located in the northeast corner of the city of West Sacramento and provides recreational watercraft access to the Sacramento River. This feature is located along the Sacramento River North Levee. The City, in partnership with the State Department of Boating and Waterways, constructed improvements during fall of 2008 that doubled the effective capacity of the boat ramp.

3.5.3 Environmental Consequences

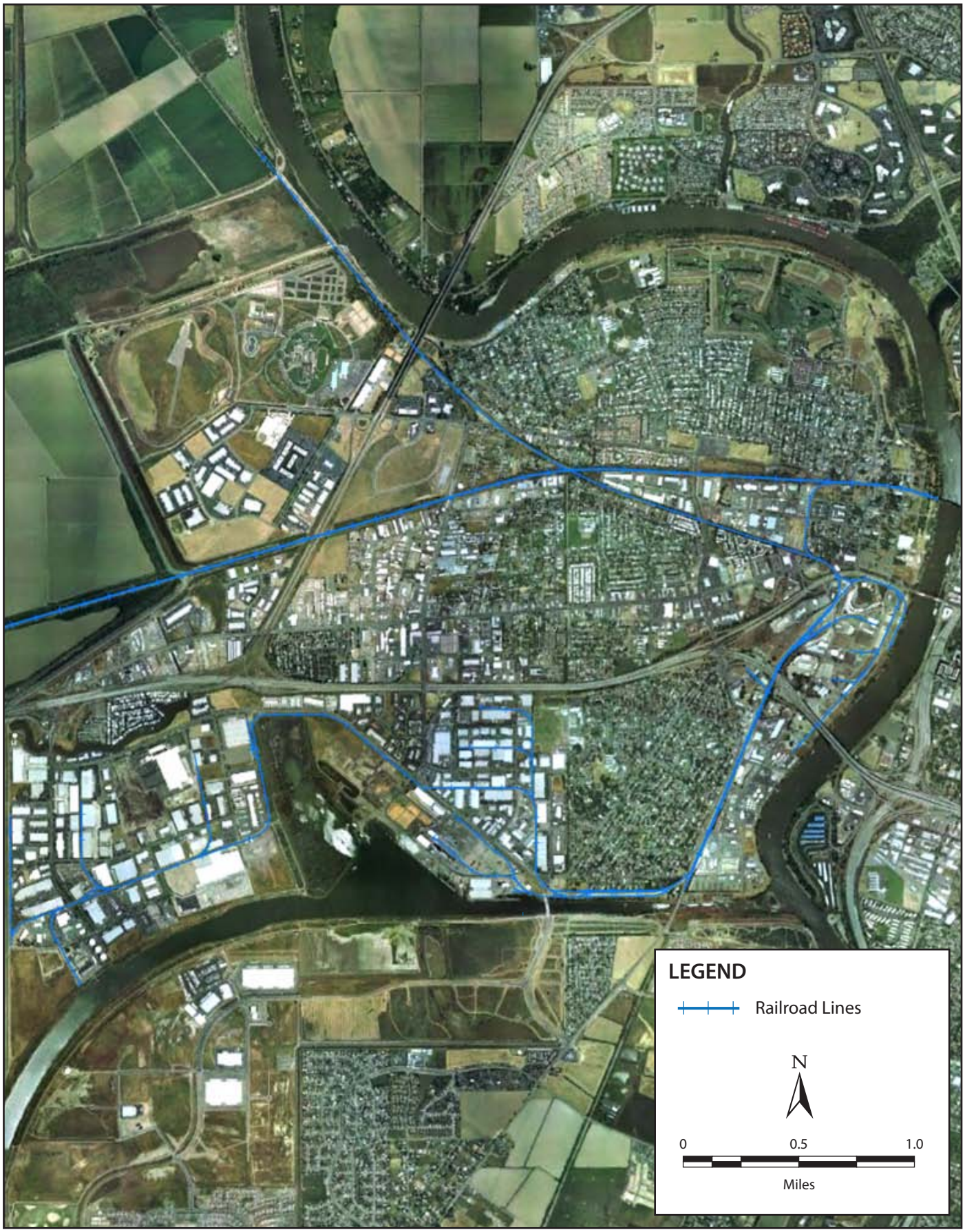
This section describes the analysis of effects relating to transportation and navigation for the proposed program. It describes the methods used to determine the effects of the proposed program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany the discussion of each effect. How effects differ among reaches is discussed as applicable.

3.5.3.1 Assessment Methods

The proposed program comprises the construction of levee alternatives along multiple separate reaches throughout the city of West Sacramento. Because of the earthwork involved and the need for materials deliveries, construction would intermittently generate substantial volumes of traffic. Once the construction is completed, maintenance needs would be very limited. Analysis of traffic effects therefore concentrated on the construction of levee alternatives.

For the purposes of analysis, the effects of these project activities were divided into two impact mechanism categories: (1) truck and worker trip effects on roadway operation and circulation, and (2) temporary partial obstructions in navigable waterways from barge trips and waterside levee construction activities.

Because the construction site would vary on any given period and the construction phase of any specific site is expected to be short-term, no quantitative LOS analysis was performed. Quantitative information (truck trips, treatment location, and number of workers) would be developed at a project level as projects are proposed.



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Figure 3.5-2
City of West Sacramento Railroads Lines

3.5.3.2 Determination of Effects

For this analysis, a transportation effect was considered significant if it would result in any of the following outcomes, which are based on professional practice, State CEQA Guidelines Appendix G, *City of West Sacramento General Plan Policy Document*, and the City's LOS policies:

- cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the V/C ratio on roads, or congestion at intersections);
- cause, either individually or cumulatively, exceedance of a LOS standard established by the City and/or the California Department of Transportation (Caltrans) for designated roads or highways;
- substantially alter present patterns of circulation or movement;
- substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., slow-moving vehicles);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks); or substantially impede navigation of watercraft as a result of the installation of cofferdams or the staging of barges within navigable sections of the surrounding waterways.

3.5.3.2.1 Effect Assumptions

It has not yet been determined whether any of the treatment alternatives would require temporary or long-term railway realignments.

3.5.3.3 Effects and Mitigation Measures

3.5.3.3.1 No Action Alternative

Under the No Action Alternative, there would be no change in the characteristics of the regional transportation system, local roadways, or navigation in and around the city of West Sacramento. It is likely that the levee roads and other roads in the study area would continue to be maintained by Yolo County and the city of West Sacramento. No road modifications, including the raising and building of new roads, would occur, and navigation would not change under the No Action Alternative. No construction related closures or delays would occur.

However, without levee improvements, there is a continued risk of levee failure or collapse, which would trigger widespread flooding and damage to the city's utilities, roadways, major interstate transportation corridors, and other infrastructure systems. The severity and magnitude would depend on the location of the levee breach, severity of the storm, and river flows at the time of a potential levee failure. A catastrophic flood event in West Sacramento would disrupt state and interstate highway, rail, and shipping traffic, causing long-term effects on the region's and state's economy and ability to move people and goods in normal circulation patterns. As stated in Section 2.4.2, No Action Alternative, West Sacramento has one of the most comprehensive transportation

networks on the west coast. Its central geographic location and extensive north-south, east-west highway access has made it a major distribution center. High volumes of truck and passenger traffic pass through the city on I- 80 and US-50/Business 80 every day, with truck traffic transporting approximately $63 billion worth of cargo annually through West Sacramento. Major transcontinental rail lines also pass through the city (transporting $5 billion in goods annually) and the Port of West Sacramento runs domestic and international shipping services. The normal circulation patterns of all of these transportation modes would be significantly affected if widespread flooding were to occur. In addition, flooding could result in substantial disruption to critical facilities and the city's emergency response capacity and critical lifelines of West Sacramento.

3.5.3.3.2 Flood and Recreation Program Alternatives

Effect TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic

Implementation of the program would require hauling of construction equipment and materials along major highways and through surface streets in the city of West Sacramento. The construction schedule, exact treatment location, number of required workers, and number of trucks have not been determined at this time. The roadways used by construction traffic would vary, depending on the specific construction site. Nonetheless, the trucks and workers required for the treatment would temporarily increase the daily and peak hour traffic along specified routes and could potentially worsen the traffic operation along these roadways, particularly if numerous trips occur during the morning or afternoon peak traffic periods. Traffic would return to normal levels once construction is completed. However, during construction, this effect could cause a substantial increase in the AADT along major highways and/or cause an exceedance of LOS standards for any of the haul route roadways. Implementation of the Traffic Control and Road Maintenance Plan environmental commitment, described in Section 2.9 of Chapter 2, Alternatives, could reduce the intensity of this effect but may not reduce it to a less than significant level. There is no feasible mitigation. Because the number of required truck trips has not been determined at this time, it is assumed that this effect would be significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect TN-1 Finding	With Mitigation
Significant – Significant and unavoidable	No feasible mitigation

Effect TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee

Implementation or operation of the program may require the removal of roads, or road sections, that run along the top of, or adjacent to, the levee crown. Additionally, equipment involved in construction (or operations; e.g., the placement of stop logs via crane) may require adjacent roads to be temporarily or permanently realigned, or temporarily closed. The removal of roads or road sections, as well as the road closings, would render the street inoperable and detour normal traffic to adjacent streets. In some cases such as The Rivers EIP on the Sacramento River North Levee where construction activities would occur on the only access road to residential homes, access for homeowners during construction may be impossible. The detouring of traffic would increase daily traffic quantities on roads in the surrounding areas. The environmental commitment to develop and implement a traffic control and road maintenance plan, and for temporary relocation assistance, described in Section 2.9, in Chapter 2, Alternatives, in addition to potential road realignments, would reduce this effect, but not always to a less-than-significant level . Roads removed during treatment construction would be rebuilt following the construction of the levee treatment, restoring traffic levels to pre-program conditions.

Road closure on the Port North Levee could potentially block vehicle access to the Port of West Sacramento, a hub for shipping commerce in the Sacramento Valley. In order to ensure that vehicular access to the Port is not lost during construction, the program proponent has committed to coordinating construction schedules with the Port of Sacramento (described under Section 2.9 in Chapter 2, Alternatives). With implementation of this environmental commitment, access to the Port would be maintained and this effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. However, the extent of the effect at the Port North Levee reach could be greater as road closure on the Port North Levee could potentially block vehicle access to the Port of West Sacramento, as discussed above.

Effect TN-2 Finding	With Mitigation
Less than significant – Significant and unavoidable	N/A

Effect TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic

The maneuvering of construction-related vehicles and equipment among the general-purpose traffic on local roads could cause safety hazards. However, execution of the environmental commitment to develop and implement a traffic control and road maintenance plan, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related traffic hazards, and would reduce the intensity of this effect. This effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect TN-3 Finding	With Mitigation
Less than significant	N/A

Effect TN-4: Increase in Emergency Response Times

Emergency access to the program vicinity could be affected by construction of the proposed program, and construction-related traffic could delay or obstruct the movement of emergency vehicles. However, execution of the environmental commitment to develop and implement a traffic control and road maintenance plan, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related effects on emergency response times. This effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect TN-4 Finding	With Mitigation
Less than significant	N/A

Effect TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers

A parking area for construction workers and trucks would be provided at staging areas adjacent to a work site or areas within the levee right-of-way; therefore, this effect would be less than significant No mitigation is required.

Effect TN-5 Finding	With Mitigation
Less than significant	N/A

Effect TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures

Although most of the construction of the proposed program would take place within the project right-of-way, temporary road closures would be needed in some areas, which could interfere with transit services or bicycle travel along these roads. Implementation of the Traffic Control and Road Maintenance Plan environmental commitment, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related traffic conflicts with alternative modes of transportation. Therefore, this effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Jet grouting ▪ Relief wells ▪ Sheet pile wall ▪ Slurry cutoff wall	▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

This effect would potentially occur in all except the following reaches: South Cross Levee, Port North and Port South Levees, DWSC West and DWSC East Levees, Yolo Bypass Levee, and Sacramento Bypass Levee.

Effect TN-6 Finding	With Mitigation
Less than significant	N/A

Effect TN-7: Temporary Changes to Navigation as a Result of Construction

Implementation of flood and recreation program elements could require in-water work that could cause a temporary reduction in navigability in the Sacramento River and the DWSC. For example, in-water work may be required for flood control activities such as the placement of rock slope protection, full levee raises, or waterside slope flattening or recreation element work such as the placement of over or in-water structures, all of which may decrease the available space for navigation of watercraft. Given the width of the DWSC, this could potentially reduce available navigable widths to the point of being inaccessible to commercial ships bound to and from the Port of West Sacramento. Navigation would return to normal following completion of the rock slope protection alternative.

WSAFCA will implement the environmental commitment described in Section 2.9 of Chapter 2, Alternatives, to reduce construction-related effects on navigation. This environmental commitment includes measures to ensure that:

- construction will not occur during major summer holiday periods; and
- warning signs and buoys will be posted at, upstream of, and downstream of all construction equipment, sites, and activities.

The section of the Sacramento River within the study area is wide enough that watercraft would still be able to pass during in-water construction work. Thus, in-channel construction activity would not substantially impede navigation in the Sacramento River, and construction-related effects would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee
Recreation	▪ Developed water access	▪ Riverside parks

Affected Reaches

This effect would occur primarily in the Sacramento River North and South Levee Reaches, the Port North and South Levee Reaches, and the DWSC West and East Levee reaches. The South Cross Levee, Yolo, and Sacramento Bypass Levee reaches do not have water bodies that support navigation.

Effect TN-7 Finding	With Mitigation
Less than significant	N/A

Effect TN-8: Increased Circulation Opportunities for Cyclists and Pedestrians

Construction of recreational biking and walking trails, as well as waterfront features, would provide increased circulation for bikers and pedestrians once construction is completed. Implementation of these aspects of the program would potentially reduce the number of cyclists and pedestrians on major roadways by providing alternative routes, thereby making roads safer in the study area. Construction of trails would occur concurrently with levee treatment implementation and would not further degrade LOS on roadways affected by the program. This effect would be beneficial.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

This effect would occur in the reaches for which recreation program alternatives are proposed. Although different recreation program alternatives are proposed, this effect would occur in the Sacramento River North and South Levees, Port North and South Levees, South Cross Levee, DWSC East Levee, Yolo Bypass and Sacramento Bypass Levees.

Effect TN-8 Finding	With Mitigation
Beneficial	N/A

Effect TN-9: Effect on Boating Amenities along the Sacramento River

Construction of developed water access elements such as public docks and a marina that are proposed as part of the program would increase navigational access to the Sacramento River. These features would not substantially impede navigation on the Sacramento River as the marina would be located in an inlet, away from normal boat traffic, and the docks would be of a consistent profile with existing area docks. This effect would be beneficial.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Recreation	▪ Developed water access	▪ Special projects

Affected Reaches

This effect would occur in the Sacramento River North Levee, and Port North and South Levees.

Effect TN-9 Finding	With Mitigation
Beneficial	N/A

Effect TN-10: Temporary Loss of Service to Railroads

Implementation of program alternatives could potentially disrupt railroad service along rail lines that intersect or that are adjacent to program levees, including the Sierra Northern, UPRR, BNSF, and AMTRAK rail lines. Construction activities could require either the temporary closure of rail lines to

accommodate construction vehicles or result in temporary removal of tracks due to treatment implementation, resulting in a temporary loss of service to the lines listed above. The program proponent would minimize any disruption to service by using the most recent and available construction methods to expedite construction activities and return service to affected railroads. Following construction, closed rail lines would be reopened and removed tracks would be replaced, restoring service to pre-program conditions. Implementation of the railroads environmental commitment, described in Section 2.9 of Chapter 2, Alternatives, would reduce the duration of the loss of service, but may not always reduce this effect to a level that would be considered less than significant. Therefore, the temporary loss of service to railroads would be less than significant to significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Jet grouting	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection

Affected Reaches

This effect would potentially occur in the following reaches: Sacramento River North Levee, Port North Levee, Yolo Bypass Levee, and the Sacramento Bypass Levee. These reaches all have a railroad line that either runs adjacent to it, on top of it, or that intersects the reach.

Effect TN-10 Finding	With Mitigation
Less than significant – Significant and unavoidable	N/A

Section 3.6

Air Quality and Climate Change

3.6.1 Introduction

This section describes the affected environment and environmental consequences for air quality and climate change, respectively, in individual section for ease of review. It describes the existing air quality and climate conditions in the study area and evaluates the potential air quality and climate change effects associated with the program implementation.

Although construction activities would result in temporary effects on air quality in the study area, the program would comply with all Federal, state, and local air quality regulations. Where a potentially significant air quality or climate change effect is identified, mitigation measures are recommended to reduce the level of expected effects.

The key sources of data and information used in the preparation of this section are listed below. Additional information is available in Appendix E.

- *Handbook for Assessing and Mitigating Air Quality Impacts* (Yolo-Solano Air Quality Management District 2007)
- *Guide to Air Quality Assessment in Sacramento County* (Sacramento Metropolitan Air Quality Management District 2004)
- *CEQA and Climate Change*, *Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act* (California Air Pollution Control Officers Association 2008)

3.6.2 Affected Environment

This section describes the regulatory settings and environmental settings for air quality and climate change, respectively. Air quality and climate change are addressed in individual sections for ease of review.

3.6.2.1 Air Quality Regulatory Setting

The study area and surrounding areas are subject to air quality regulations developed and implemented at the Federal, state, and local levels. At the Federal level, EPA is responsible for implementation of the Clean Air Act (CAA). Some portions of the CAA (e.g., certain mobile-source and other requirements) are implemented directly by EPA. Other portions of the CAA (e.g., stationary-source requirements) are implemented by state and local agencies.

Responsibility for attaining and maintaining air quality in California is divided between the California Air Resources Board (CARB) and regional air quality districts. Areas of control for the regional districts are set by CARB, which divides the state into air basins. These air basins are defined by topography that limits air flow access, or by county boundaries. Plans, policies, and regulations relevant to the program are discussed below.

3.6.2.1.1 Federal

Clean Air Act

The CAA establishes Federal air quality standards, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The standards are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety, and the latter to protect environmental values, such as plant and animal life.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and an incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that are most applicable to the proposed program are Title I (Non-attainment Provisions) and Title II (Mobile Source Provisions). Title I of the CAA identifies attainment, non-attainment, and unclassifiable areas with regard to criteria pollutants and sets deadlines for all areas to reach attainment for the following criteria pollutants: ozone, carbon monoxide (CO), respirable particulates (PM10, particulate matter less than 10 microns in diameter), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. The NAAQS were amended in July 1997 to include the 8-hour ozone standard and a NAAQS for fine particulates (PM2.5, particulate matter less than 2.5 microns in aerodynamic diameter). Applicable NAAQS for these criteria pollutants are presented in Table 3.6-1.

Table 3.6-1. National and California Ambient Air Quality Standards

		Federal (1)		
Pollutant	**Averaging Time**	**Primary**	**Secondary**	**California (2)**
Ozone	8 hour (3)	0.075 ppm	0.075 ppm	0.07 ppm
	1 hour	No standard	No standard	0.09 ppm
Carbon monoxide—CO	8 hour	9 ppm	No standard	9 ppm
	1 hour	35 ppm	No standard	20 ppm
Respirable particulate matter—PM10	24 hour (4)	150 µg/m^3	150 µg/m^3	50 µg/m^3
	Annual	No standard	No standard	20 µg/m^3
Fine particulate matter—PM2.5	24 hour (5)	35 µg/m^3	35 µg/m^3	35 µg/m^3
	Annual	15 µg/m^3	15 µg/m^3	12 µg/m^3
Nitrogen dioxide—NO_2	Annual	0.053 ppm	0.053 ppm	0.03 ppm
	1 hour	No standard	No standard	0.18 ppm
Sulfur dioxide—SO_2	Annual	0.03 ppm	No standard	No standard
	24 hour	0.14 ppm	No standard	0.04 ppm
	3 hour	No standard	0.50 ppm	No standard
	1 hour	No standard	No standard	0.25 ppm
Lead	30 day	No standard	No standard	1.5 µg/m^3
	Calendar quarter	1.5 µg/m^3	1.5 µg/m^3	No standard
	Rolling 3 month	0.15 µg/m^3	0.15 µg/m^3	No standard

Pollutant	Averaging Time	Federal (1) Primary	Federal (1) Secondary	California (2)

Source: California Air Resources Board 2009a.

ppm = parts per million; µg/m^3 = micrograms per cubic meter.

[1] National standards are not to be exceeded more than once a year.

[2] California standards for ozone, CO, PM10, PM2.5, NO_2, and SO_2 (1 and 24 hour) are values that are not to be exceeded. All others are not to be equaled or exceeded.

[3] To attain the Federal ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm.

[4] To attain the Federal PM10 standard, the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 must be equal to or less than 1.

[5] To attain the Federal PM2.5 standard, 98% of the daily concentrations, averaged over 3 years, must be equal to or less than 35 µg/m^3.

The CAA requires states to submit a SIP for areas in non-attainment for Federal standards. The SIP, which is reviewed and approved by the EPA, must demonstrate how the Federal standards would be achieved. Failing to submit a plan or secure approval could lead to denial of Federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, EPA is directed to prepare a Federal implementation plan.

Title II of the CAA contains a number of provisions regarding mobile sources, including requirements for reformulated gasoline, new tailpipe emission standards for cars and trucks, oxides of nitrogen (NO_X) standards for heavy-duty vehicles, and a program for cleaner fleet vehicles.

General Conformity Regulation

EPA enacted the Federal General Conformity regulation (40 CFR Parts 5, 51, and 93) in 1993. The General Conformity rule applies to Federal actions located in non-attainment areas that do not include stationary industrial sources requiring preconstruction air quality permits from local air pollution control agencies. The purpose is to ensure that Federal actions do not generate emissions that interfere with state and local agencies' SIPs and emission-reduction strategies.

The General Conformity rule applies in air quality non-attainment or maintenance areas, and only to direct and indirect emissions associated with the portions of any Federal action for which a Federal permitting agency has the authority to impose emission reductions. Since the program is within USACE's jurisdiction and would require a permit from USACE, all direct and indirect emissions generated by the program construction are subject to General Conformity.

The program would generate air pollutant emissions from construction sites in Yolo County and would generate indirect on-road emissions in both Yolo County and Sacramento County, both of which are designated a serious non-attainment area for ozone NAAQS. Yolo County is designated a non-attainment area for PM2.5 NAAQS and Sacramento County is a moderate non-attainment area for PM10 NAAQS. Based on those designations, the General Conformity thresholds are:

- 50 tons/year of NO_X,
- 50 tons/year of reactive organic gasses (ROG),
- 100 tons/year of PM2.5 for emissions occurring in Yolo County, and
- 100 tons/year of PM10 for emissions occurring in Sacramento County.

All emission sources include in-water equipment, on-land non-road equipment, on-road haul trucks, and on-road commute vehicles that operate on program components are required to comply with the General Conformity thresholds. If the annual emissions exceed the applicability thresholds, then the applicant must consult with the air quality district to confirm that the county-wide emission budget prepared for the SIP included the general types of activity proposed by the applicant.

Federal Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, EPA established a series of increasingly strict emission standards for new engines. New construction equipment used for the program, including heavy-duty trucks, off-road construction equipment, tugboats, and barges, will be required to comply with the emission standards.

3.6.2.1.2 State

California Clean Air Act

In 1988, the state legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. The CCAA requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most criteria pollutants and set standards for other pollutants recognized by the state. In general, the CAAQS are more stringent than the corresponding NAAQS.

CARB and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through district-level air quality management plans that would be incorporated into the SIP. In California, EPA has delegated authority to prepare SIPs to CARB, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

The CCAA of 1988 substantially added to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA focuses on attainment of the CAAQS, which, for certain pollutants and averaging periods are more stringent than the comparable Federal standards.

The CCAA requires designation of attainment and non-attainment areas with respect to CAAQS. The CCAA also requires that local and regional air districts expeditiously adopt and prepare an Air Quality Attainment Plan if the district violates state air quality standards for ozone, CO, NO_2, or SO_2. These plans are specifically designed to attain these standards and must be designed to achieve an annual 5% reduction in district-wide emissions of each non-attainment pollutant or its precursors. No locally prepared attainment plans are required for areas that violate the state PM10 standards.

The CCAA requires that the state air quality standards be met as expeditiously as practicable but, unlike the Federal CAA, does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that would require more time to achieve the standards.

Idling Limit Regulation

CARB has adopted a regulation for in-use off-road diesel vehicles that became effective under California law on June 15, 2008. This regulation is designed to reduce toxic air contaminants (TACs) from diesel-powered construction and mining vehicles operating in California. Fleet owners are subject to retrofit or accelerated replacement/repower requirements for which CARB must obtain authorization from EPA prior to enforcement under the CAA. However, this regulation also imposes idling limitations on owners, operators, and renters or lessees of off-road diesel vehicles, which CARB is authorized to enforce.

The idling limits are effective and enforceable as of June 15, 2008. The regulation requires an operator of applicable off-road vehicles (self-propelled diesel-fueled vehicles of 25 horsepower and greater that were not designed for on-road driving) to limit idling to no more than 5 minutes. These requirements are specified in 13 CCR 2449(d)(3).

Control of Airborne Asbestos

The CARB has adopted an asbestos Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations. The measure requires use of best available dust control measures to prevent off-site migration of asbestos-containing dust from road construction and maintenance activities, construction and grading operations, and quarrying and surface mining operations in areas of asbestos, serpentine, or ultramafic rock.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, CARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the program, including heavy duty trucks, off-road construction equipment, tugboats, and barges, will be required to comply with the standards.

State NO_X Reduction Program

The Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) is a voluntary program that offers grants to owners of heavy-duty vehicles and equipment. The program is a partnership between the CARB and the local air districts throughout the state. Locally, the air districts administer the Carl Moyer program. The purpose of the program is to reduce air pollution emissions from heavy-duty engines. Grants are available for projects that:

- install particulate traps,
- replace older heavy-duty engines with newer and cleaner engines and add a particulate trap,
- purchase new vehicles or equipment that is cleaner than the law requires,
- replace heavy-duty equipment with electric equipment, and
- install electric idling-reduction equipment.

3.6.2.1.3 Local

At the local level, responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of Federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

Yolo-Solano Air Quality Management District

The program construction sites are located in Yolo County; where the Yolo-Solano Air Quality Management District (YSAQMD) has local air quality jurisdiction over the program components. YSAQMD has adopted CEQA emission thresholds in the *Handbook for Assessing and Mitigating Air Quality Impacts* (Yolo-Solano Air Quality Management District 2007) to determine the level of significance of project-related emissions. Table 3.6-2 summarizes applicable thresholds that are used in the analysis of project-related construction and operational emissions. Emissions that exceed the designated threshold levels are considered potentially significant and should be mitigated.

Table 3.6-2. YSAQMD Significance Thresholds for Construction and Operational Emissions

Pollutant	Construction and Operation Significance Threshold
ROG	10 tons/year
NO_X	10 tons/year
PM10	80 lbs/day
CO	Violation of a CAAQA for CO

Source: Yolo-Solano Air Quality Management District 2007.
ROG = reactive organic gas.
NO_X = oxides of nitrogen.
PM10 = particulate matter 10 microns or less in diameter.
CO = carbon monoxide.

All projects located in Yolo County are subject to the YSAQMD regulations in effect at the time of construction. Specific regulations applicable to the proposed program components may involve diesel construction equipment emissions, fugitive dust, on-road haul truck emissions, and general permit requirements. List below are description of YSAQMD rules that would be applicable to the program.

- Dust emissions must be prevented from creating a nuisance to surrounding properties as regulated under Rule 2.5, Nuisance.
- Portable equipment greater than 50 horsepower, other than vehicles, must be registered with either the CARB Portable Equipment Registration Program (PERP) or with the YSAQMD.
- Architectural coating and solvents used at the program shall be compliant with Rule 2.14, Architectural Coatings.

- Cutback and emulsified asphalt application shall be conducted in accordance with Rule 2.28, Cutback and Emulsified Asphalt Paving Materials.

Sacramento Metropolitan Air Quality Management District

The program would generate direct air pollutant emissions from on-site construction equipment in Yolo County; however, the indirect on-road emissions would be generated from delivery trucks and commute vehicles in both Yolo County and Sacramento County. For the indirect on-road emissions that would occur in Sacramento County, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has local air quality jurisdiction over the air pollutant emissions.

SMAQMD has adopted CEQA emission thresholds in the *Guide to Air Quality Assessment* (Sacramento Metropolitan Air Quality Management District 2004) to determine the level of significance of project-related emissions. Table 3.6-3 summarizes applicable thresholds that are used in the analysis for project-related on-road vehicle emissions. Emissions that exceed the designated threshold levels are considered potentially significant and should be mitigated.

Table 3.6-3. SMAQMD Significance Thresholds for Construction and Operational Emissions

Pollutant	Construction Significance Threshold	Operation Significance Threshold
ROG	No threshold	65 lbs/day
NO_X	85 lbs/day	65 lbs/day
PM10	Violation of a CAAQA for PM10	
CO	Violation of a CAAQA for CO	

Source: Sacramento Metropolitan Air Quality Management District 2004.

All construction projects, regardless of size, are required to implement standardized BMPs for fugitive dust control and reduction of tailpipe emissions. If the construction emission exceeds the NO_X threshold, the contractor will be required to provide a plan, for approval by SMAQMD, demonstrating that the heavy-duty off-road equipment to be used in the project sites will achieve a project-wide fleet-average 20% NO_X reduction and 45% diesel particulate reduction compared to the most recent CARB fleet average at time of construction. Because the program would not generate construction emissions from non-road equipment within the SMAQMD, this reduction measure is not applicable. For this program, if the on-road NO_X emissions generated within the SMAQMD exceed the CEQA threshold, the project proponent will be required to pay an offsite mitigation fee of $16,000 per ton of mitigated on-road construction emissions exceeding the NO_X threshold.

3.6.2.2 Climate Change Regulatory Setting

3.6.2.2.1 Federal

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year (FY) 2008 Consolidated Appropriations Act (H.R.

2764; Public Law 110-161), that required EPA to develop "… mandatory reporting of greenhouse gasses above appropriate thresholds in all sectors of the economy…." The Reporting Rule would apply to most entities that emit 25,000 metric tons of carbon dioxide equivalents (CO_2e) or more per year. Starting in 2010, facility owners are required to submit an annual greenhouse gas (GHG) emissions report with detailed calculations of facility GHG emissions. The Reporting Rule would also mandate recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports.

Environmental Protection Agency Endangerment and Cause and Contribute Findings

On December 7, 2009, EPA signed the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the CAA. Under the Endangerment Finding, EPA finds that the current and projected concentrations of the six key well-mixed GHGs, carbon dioxide (CO2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride in the atmosphere threaten the public health and welfare of current and future generations. Under the Cause or Contribute Finding, EPA finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed new Corporate Average Fuel Economy standards for light-duty vehicles, which EPA proposed in a joint proposal including the Department of Transportation's proposed Corporate Average Fuel Economy standards on September 15, 2009.

On February 19, 2010, the CEQ issued draft NEPA guidance on the consideration of the effects of climate change and GHG emissions. This guidance advises Federal agencies that they should consider opportunities to reduce GHG emissions caused by Federal actions, adapt their actions to climate change impacts throughout the NEPA process; and address these issues in their agency NEPA procedures. Where applicable, the scope of the NEPA analysis should cover the GHG emissions effects of a proposed action and alternatives action and the relationship of climate change effects to a proposed action or alternatives.

3.6.2.2.2 State

State Regulations on Greenhouse Gases and Climate Change

Executive Order S-3-05

Signed by Governor Arnold Schwarzenegger on June 1, 2005, Executive Order S-3-05 asserts that California is vulnerable to the effects of climate change. The executive order puts forth that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emissions targets. Executive Order S-3-05 established the following GHG emissions reduction targets for California.

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80% below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (CalEPA) to initiate a multi-agency effort to reduce GHG emissions to target levels. To comply with the executive order, the secretary of CalEPA created a Climate Act Team (CAT) composed of members of various state agencies and commissions. CAT released its first report in March 2006 (California Environmental Protection Agency 2006). The report proposes achieving GHG targets through the voluntary actions of California businesses, local government and community actions, and state incentive and regulatory programs.

Assembly Bill 32, California Climate Solutions Act of 2006

In September 2006, the California State Legislature adopted Assembly Bill 32, the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes a cap on statewide GHG emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. Under AB 32, GHGs are defined as CO_2, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that CARB takes the following actions.

- Adopt early action measures to reduce GHG.
- Establish a statewide GHG emissions cap for 2020 based on 1990 emissions.
- Adopt mandatory report rules for significant GHG sources.
- Adopt a scoping plan indicating how emission reductions would be achieved through regulations, market mechanisms, and other actions.
- Adopt regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHGs.

In December 2007, CARB approved the 2020 emission limit (1990 level) of 427 million metric tons of CO_2e. The 2020 target requires the reduction of 169 million metric tons of CO_2e, or approximately 30% below the state's projected "business-as-usual" 2020 emissions of 596 million metric tons of CO_2e.

Also in December 2007, CARB adopted mandatory reporting and verification regulations pursuant to AB 32. The regulations became effective January 1, 2009, with the first reports covering 2008 emissions. The mandatory reporting regulations require reporting for major facilities, those that generate more than 25,000 metric tons/year of CO_2e. To date, CARB has met all of the statutorily mandated deadlines for promulgation and adoption of regulations.

Climate Change Scoping Plan

On December 11, 2008, pursuant to AB 32, CARB adopted the Climate Change Scoping Plan. This plan outlines how emissions reductions from significant sources of GHGs will be achieved via regulations, market mechanisms, and other actions. Six key elements, outlined in the scoping plan, are identified to achieve emissions reduction targets:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards.
- Achieving a statewide renewable energy mix of 33%.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system.

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gasses, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

The Climate Change Scoping Plan also described recommended measures that were developed to reduce GHG emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving our natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately affect low-income and minority communities. These measures put the state on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80% below 1990 levels. The measures in the approved Climate Change Scoping Plan will be developed over the next 2 years and be in place by 2012.

Senate Bill 97

Senate Bill 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. The bill directs the California Office of Planning and Research (OPR) to prepare, develop, and transmit to CARB the guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. SB 97 directs the State Resources Agency (now Natural Resources Agency), the agency charged with adopting the CEQA Guidelines, to certify and adopt such Guidelines by January 2010.

In June 2008, OPR issued a Technical Advisory on CEQA and Climate Change (California Office of Planning and Research 2008). For projects subject to CEQA, this document recommends that emissions be calculated and mitigation measures be identified to reduce those emissions. The OPR report does not identify emission thresholds for GHGs but instead recommends that each lead agency develop their own thresholds. On December 30, 2009 the Natural Resources Agency adopted amendments to the CEQA Guidelines for Greenhouse gas emission. Those amendments became effective on March 18, 2010. The amendments provide guidance on the analysis and mitigation of the effects of greenhouse gas (GHG) emissions, including determining significance and significance thresholds.

Actions Taken by California Attorney General's Office

The California Attorney General (AG) has filed comment letters under CEQA about a number of proposed projects. The AG also has filed several complaints and obtained settlement agreements for CEQA documents covering general plans and individual programs that the AG found either failed to analyze GHG emissions or failed to provide adequate GHG mitigation. The AG's office prepared a report listing the measures that local agencies should consider under CEQA to offset or reduce global warming effects. The AG's office also has prepared a chart of modeling tools to estimate GHG emissions effects of projects and plans. Information on the AG's actions can be found on the California Department of Justice, Office of Attorney General web site (California Department of Justice 2008).

California Air Pollution Control Officers Association Guidance

The California Air Pollution Control Officers Association (CAPCOA) released a report in January 2008 that describes methods to estimate and mitigate GHG emissions from projects subject to CEQA. The CAPCOA report evaluates several GHG thresholds that could be used to evaluate the significance of a project's GHG emissions. The CAPCOA report, however, does not recommend any one threshold. The report is designed as a resource for public agencies as they establish agency procedures for reviewing GHG emissions from projects subject to CEQA. (California Air Pollution Control Officers Association 2008.)

Executive Order S-13-08

Executive Order S-13-08, issued November 14, 2008, directs the California Natural Resources Agency, Department of Water Resources, Office of Planning and Research, Energy Commission, State Water Resources Control Board, State Parks Department, and California's coastal management agencies to participate in a number of planning and research activities to advance California's ability to adapt to the impacts of climate change. The order specifically directs agencies to work with the National Academy of Sciences to initiate the first California Sea Level Rise Assessment and to review and update the assessment every 2 years after completion; to immediately assess the vulnerability of the California transportation system to sea level rise; and to develop a California Climate Change Adaptation Strategy.

3.6.2.3 Air Quality Environmental Setting

3.6.2.3.1 Regional Climate and Meteorology

The study area is in Yolo County, which is located in the Sacramento Valley Air Basin (SVAB). The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and parts of Solano and Placer Counties. The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada, and on the west by the Coast Range.

The SVAB has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters. During winter, the North Pacific storm track intermittently dominates Sacramento Valley weather, and fair weather alternates with periods of extensive clouds and precipitation. Periods of dense and persistent low-level fog, which is most prevalent between storms, are also characteristic of winter weather in the valley. The frequency and persistence of heavy fog in the valley diminishes with the approach of spring. The average yearly temperature range for the Sacramento Valley is 20°F to 115°F, with summer high temperatures often exceeding 90°F and winter low temperatures occasionally dropping below freezing.

In general, the prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north. The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south. Essentially, this phenomenon causes the air pollutants to be blown south toward the Sacramento Valley and Yolo County. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating Federal or state standards. The eddy normally dissipates around noon when the delta sea breeze arrives. (Yolo-Solano Air Quality Management District 2007.)

3.6.2.3.2 Background Information on Air Pollutants

Air quality studies generally focus on five pollutants most commonly measured and regulated, and referred to as criteria air pollutants: ozone, CO, inhalable PM (PM10 and PM2.5), NO_2, and SO_2. Because ozone, a photochemical oxidant, is not emitted into the air directly from sources, emissions of ozone precursors, including NO_X and ROG, are regulated with the aim of reducing ozone formation in the lowermost region of the troposphere.

Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale: NO_2 reacts photochemically with ROG to form ozone, and this reaction occurs at some distance downwind of the source of pollutants. Pollutants such as CO, PM10, and PM2.5 are considered to be local pollutants because they tend to disperse rapidly with distance from the source.

The principal characteristics surrounding these pollutants are discussed below. TACs and GHGs are also discussed below, although no air quality standards exist for these pollutants.

Ozone

Ozone is an oxidant that attacks synthetic rubber, textiles, and other materials and causes extensive damage to plants by leaf discoloration and cell damage. It is also a severe eye, nose, and throat irritant and increases susceptibility to respiratory infections. Ozone is not emitted directly into the air: it forms from a photochemical reaction in the atmosphere. Ozone precursors, including ROG and NO_X, are emitted by mobile sources and stationary combustion equipment and react in the presence of sunlight to form ozone. Because reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summertime problem.

Carbon Monoxide

CO is essentially inert to most materials and to plants but can significantly affect human health because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. Effects on humans range from slight headaches to nausea to death. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter, when periods of light wind combine with the formation of ground-level temperature inversions—typically from evening through early morning. These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Particulate Matter

PM suspended in the atmosphere can reduce visibility, retard plant growth, corrode materials, and affect human health. Health concerns focus on particles small enough to reach the lungs when inhaled (inhalable PM). NAAQS and CAAQS for PM apply to two classes of inhalable particulates: PM10 and PM2.5.

Nitrogen Dioxide

NO_2 is a brownish gas that contributes to the formation of ground-level ozone pollution. NO_2 increases respiratory disease and irritation and may reduce resistance to certain infections. The majority of ambient NO_2 is not directly emitted but is formed rather quickly from the reaction of nitric oxide (NO) and oxygen in the atmosphere. NO and NO_2 are the primary pollutants that make up the group of pollutants referred to as NO_X. In the presence of sunlight, complex reactions of NO_X with ozone and other air pollutants produce the majority of NO_2 in the atmosphere. NO_2 is one of the NO_X emitted from high-temperature combustion processes, such as those occurring in trucks, cars, and power plants. Indoors, home heaters and gas stoves also produce substantial amounts of NO_2.

Sulfur Dioxide

SO_2 is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. SO_2 is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives and off-road diesel equipment. SO_2 also is emitted from several industrial processes, such as petroleum refining and metal processing.

Toxic Air Contaminants

TACs are a category of air pollutants that have been shown to affect human health but are not classified as criteria pollutants. TACs are generated by various kinds of sources, including stationary sources such as dry cleaners and gas stations; combustion sources; mobile sources such as diesel trucks, ships, and trains; and area sources such as farms, landfills, and construction sites. Significant health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) non-carcinogenic, and long-term (chronic) non-carcinogenic. To date, CARB has identified 21 TACs and adopted EPA's list of hazardous air pollutants (HAPs) as TACs. In August 1998, diesel particulate matter (DPM) was added to the CARB list of TACs (California Air Resources Board 1998).

Diesel Particulate Matter

DPM is the most complex of diesel emissions. Diesel particulates, as defined by most emission standards, result from diluted and cooled exhaust gasses. DPM in California is a significant part of the total TAC level in the state. In September 2000, CARB approved a Diesel Risk Reduction Plan (California Air Resources Board 2000) to reduce PM emissions from diesel-fueled engines and vehicles. The plan outlines a comprehensive and ambitious program to reduce emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses); off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats); portable equipment (e.g., pumps); and stationary engines (e.g., stand-by power generators). According to the plan, CARB will work with the heavy-duty equipment manufacturing companies and operators to develop an emissions reduction program for construction equipment.

3.6.2.3.3 Existing Air Quality Conditions

Air quality monitoring data for the last 3 years (2006–2008) are presented in Table 3.6-3. Although the program is located in Yolo County, the nearest monitoring stations in both Yolo County and Sacramento County are selected to present air quality of program vicinity. Air quality concentrations typically are expressed in terms of ppm or micrograms per cubic meter ($\mu g/m^3$). The nearest monitoring stations to the study area are the West Sacramento 15th Street station, which monitors PM10, the Sacramento T Street station, which monitors ozone and PM2.5; and the Sacramento Del Paso Manor station, which monitors CO.

As indicated in Table 3.6-4, the 15th Street monitoring station has experienced 19 violations of the state 24-hour PM10 standard during the last 3 years. The T Street monitoring station has experienced 15 violations of the state 1-hour ozone standard and 39 violations of the state 8-hour ozone standard. There were 37 violations of the Federal 24-hour PM2.5 standard at the T Street monitoring station. There were no violations of the CO standards during this period.

Table 3.6-4. Ambient Air Quality Monitoring Data from the West Sacramento and Sacramento Stations (2006–2008)

Pollutant Standard	2006	2007	2008
Ozone—Sacramento T Street Station			
National maximum 1-hour concentration (ppm)	0.106	0.109	0.107
National maximum 8-hour concentration (ppm)	0.090	0.089	0.092
Number of days standard exceeded [a]			
CAAQS 1-hour (>0.09 ppm)	6	2	7
NAAQS 8-hour (>0.075 ppm)	6	2	9
CAAQS 8-hour (>0.07 ppm)	14	7	18
CO—Sacramento Del Paso Manor Station			
National maximum 8-hour concentration (ppm)	3.5	2.9	2.5
National maximum 1-hour concentration (ppm)	4.4	3.5	2.9
Number of days standard exceeded [a]			
NAAQS 8-hour (≥9.0 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0
PM10[b]—West Sacramento 15th Street Station			
National maximum 24-hour concentration (μg/m^3) [c]	77	61	61
State maximum 24-hour concentration (μg/m^3) [d]	78.0	66.0	61.6
National annual average concentration (μg/m^3)	28	21	29
State annual average concentration (μg/m^3) [e]	28.8	21.7	–
Number of days standard exceeded [a]			
NAAQS 24-hour (>150 μg/m^3) [f]	0	0	0
CAAQS 24-hour (>50 μg/m^3) [f]	9	5	5
PM2.5[b]— Sacramento T Street Station			
National maximum 24-hour concentration (μg/m^3) [c]	54.0	58.0	66.1
State maximum 24-hour concentration (μg/m^3) [d]	54.0	58.0	78.9
National annual average concentration (μg/m^3)	12.4	11.9	9.8
State annual average concentration (μg/m^3) [e]	12.9	–	–
Number of days standard exceeded [a]			
NAAQS 24-hour (>35 μg/m^3) [f]	14	19	4

Sources: California Air Resources Board 2009b, U.S. Environmental Protection Agency 2009a.

– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using Federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

3.6.2.3.4 Air Quality Attainment Status

The air quality attainment status for criteria pollutants in Yolo County and Sacramento County are summarized in Table 3.6-5. Areas are classified as in attainment or in non-attainment with respect to CAAQS and NAAQS. These classifications are made by comparing actual monitored air pollutant concentrations to state and Federal standards. If a pollutant concentration is lower than the state or Federal standard, the area is considered to be in attainment of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a non-attainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. This typically occurs in non-urbanized areas, where pollutant levels may be less closely monitored.

On December 22, 2008, EPA classified Yolo County as a partial non-attainment area for the PM2.5 standard. With the new designation, an attainment plan will be submitted to EPA by 2012.

Table 3.6-5. Yolo County and Sacramento County Air Quality Attainment Status

Pollutant	Averaging Time	State Standards	National Standards
Yolo County			
Ozone	1-Hour	Serious Non-attainment	No Designation
	8-Hour	Non-attainment	Serious Non-attainment
CO		Attainment	Attainment
PM10	24-Hour	Non-attainment	Unclassified
PM2.5	24-Hour	Unclassified	Partial Non-attainment
Sacramento County			
Ozone	1-Hour	Serious Non-attainment	No Designation
	8-Hour	Non-attainment	Serious Non-attainment
CO		Attainment	Attainment
PM10	24-Hour	Non-attainment	Moderate Non-attainment
PM2.5	24-Hour	Non-attainment	Unclassified/Attainment

Source: California Air Resources Board 2009c.

3.6.2.3.5 Sensitive Receptors

The NAAQS and CAAQS apply at publicly accessible areas, regardless of whether those areas are populated. For the purposes of air quality analysis, sensitive land uses are defined as locations where human populations, especially children, seniors, and sick persons, are located and where there is reasonable expectation of continuous human exposure according to the averaging period for the air quality standards (e.g., 24-hour, 8-hour, and 1-hour). Typical sensitive receptors are residences, hospitals, and schools.

Sensitive land uses adjacent to the construction area are primarily residential subdivisions and isolated single-family residences. Other sensitive land uses include schools (e.g., Bryte Elementary), hospitals (e.g., Sutter General), and areas of recreation (e.g., the Jedediah Smith Recreational Trail).

Sensitive receptors that could be affected by the direct and indirect emissions associated with the project construction include receptors in the City of Sacramento across the river from program

construction sites and receptors adjacent to the construction zones and haul routes in both Yolo County and Sacramento County.

3.6.2.4 Climate Change Environmental Setting

3.6.2.4.1 Background Information on Climate Change

Global warming refers to the increase in the average temperature of the Earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to by unequivocal (Intergovernmental Panel on Climate Change 2007) with global surface temperature increasing approximately 1.33°F over the last 100 years. Continued warming is projected to increase the average global temperature between 2°F and 11°F over the next 100 years. The causes of this warming have been identified as both natural processes and as the result of human actions. The Intergovernmental Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. However, after 1950, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase.

Increases in GHG concentrations in the Earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the Earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the Earth's surface inhabitable. However, increases in the concentrations of these gasses in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons, hydrofluorocarbons, and water vapor. Each of the principal greenhouse gasses has a long atmospheric lifetime (1 year to several thousand years). In addition, the potential heat trapping ability of each of these gasses varies significantly. Methane is 23 times as potent as CO_2, while SF_6 is 22,200 times more potent than CO_2. The most common GHG is CO_2, which constitutes approximately 84% of all emissions of GHGs in California. GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and TACs, which are pollutants of regional and local concern.

Conventionally, GHGs have been reported as CO_{2e}, an equivalency measure that takes into account the relative potency of non-CO_2 GHGs and converts their quantities to an equivalent amount of CO_2 so that all emissions can be reported as a single quantity. The primary human-made processes that release these gasses include burning of fossil fuels for transportation, heating and electricity generation; agricultural practices that release methane such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high global warming potential gasses such as SF_6, perfluorocarbons, and hydrofluorocarbons. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing the Earth's capacity to remove CO_2 from the air and altering the Earth's albedo or surface reflectance, allowing more solar radiation to be absorbed.

3.6.2.4.2 Global Climate Trends and Associated Impacts

The rate of increase in global average surface temperature over the last 100 years has not been consistent; the last three decades have warmed at a much faster rate – on average 0.32°F per decade. Eleven of the twelve years from 1995 to 2006 rank among the twelve warmest years in the instrumental record of global average surface temperature (going back to 1850) (Intergovernmental Panel on Climate Change 2007).

During the same period over which this increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen on average1.8 millimeters per year; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; tropical cyclone activity in the North Atlantic has increased; peak runoff timing of many glacial and snow-fed rivers has shifted earlier; as well as numerous other observed conditions. Although it is difficult to prove a definitive cause and effect relationship between global warming and other observed changes to natural systems, there is high confidence in the scientific community that these changes are a direct result of increased global temperatures (Intergovernmental Panel on Climate Change2007).

3.6.2.4.3 California Climate Trends

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California but at different rates. The annual *minimum* temperature averaged over all of California increased 0.33°F per decade from 1920 to 2003, while the average annual *maximum* temperature increased 0.1°F per decade (Moser et al. 2009).

With respect to California's water resources, the most significant impacts of global warming have been changes to the water cycle and sea level rise. Over the past century, the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote et al. 2005, Knowles 2006) and snow pack in the Sierra Nevada is melting earlier in the spring (Kapnick and Hall 2009). The average early spring snowpack in the Sierra Nevada has decreased by about 10% during the last century, a loss of 1.5 million acre-feet of snowpack storage (California Department of Water Resources 2008). These changes have significant implications for water supply, flooding, aquatic ecosystems, energy generation, and recreation throughout the state. During the same period, sea levels along California's coast rose 7 inches (California Department of Water Resources 2008). Sea level rise associated with global warming will continue to threaten coastal lands and infrastructure, increase flooding at the mouths of rivers, place additional stress on levees in the Sacramento-San Joaquin Delta, and will intensify the difficulty of managing the Sacramento-San Joaquin Delta as the heart of the state's water supply system.

3.6.2.4.4 Local Climate

See Section 3.6.2.3.1, Regional Climate and Meteorology, above.

3.6.3 Environmental Consequences

This section describes the air quality and climate change effects associated with the program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, reduce,

eliminate, or compensate for) significant effects accompany each effect discussion. Air quality and climate change environmental consequences have been divided into individual sections for ease of review.

3.6.3.1 Air Quality Assessment Methods

Almost all increased air pollutant emissions associated with the proposed program would be generated by construction-related activities. Therefore, the focus of the air quality analysis is to evaluate whether the construction-related emissions would exceed emission thresholds as established by YSAQMD, SMAQMD, and General Conformity thresholds. Construction emissions from the program implementation would result in localized, short-term effects on ambient air quality in the area. These short-term emissions, especially PM10, ROG, and NO_X, have the potential to represent a significant air quality effect. Fugitive dust emissions are associated primarily with site preparation, excavation, and levee reconstruction earthwork, and vary as a function of factors such as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled on site and off site. For the construction of the program, ROG and NO_X emissions are associated primarily with diesel equipment exhaust and asphalt paving.

After the proposed alternatives are constructed, maintenance of the program facilities generally would be performed as needed. Maintenance work is less extensive than the construction activities and takes place over a few days per year. In addition, maintenance and operational activities are part of the existing environmental baseline and thus would not create a substantial source of new emissions.

There are nine levee reaches within the study area. Depending on the deficiencies, a number of alternatives or combination of alternatives can be constructed to address the deficiencies along each reach. For the purposes of the air quality analysis, levee alternatives that would be constructed in the same time under the same project should be evaluated together, which could include alternatives that occur at multiple locations or along multiple reaches, depending on the scale of a project. At this time, the actual project locations, construction schedule, proposed alternatives, and the magnitude of the construction have not been determined for the program. Therefore, the air quality effect of the program implementation is evaluated qualitatively. Program-level mitigation measures are recommended, and a more in-depth analysis of potential air quality effects would be performed in a separate project-level document when a project is identified.

To assist in the determination of effects, various quantitative models are available to predict emissions and particulate matter generation. Two such models are URBEMIS and SacRCEM. While SacRCEM has typically been used for other recent levee improvement projects in the Sacramento Valley, both models have been applied to simulate the project-level air quality effects of the WSLIP. Given the similarity in the architecture of the two models, for ROG, NO_X, and CO_2, the outputs from the two models are very similar and any variance is considered not statistically significant. For PM, the URBEMIS outputs are considered more conservative (meaning the production values are higher) based on the model's internal methods and assumptions for treatment of earthwork. As the project proponent, WSAFCA has selected this more conservative approach to not under-predict potential project effects. URBEMIS further allows application of mitigation measures to fine-tune and predict quantitative effectiveness of available measures and assist in determining post-mitigation findings. For these reasons, WSAFCA has selected to use the results of URBEMIS for quantitative determination of effects, effect findings, and mitigation efficacy. The results of both models for the WSLIP EIPs are in Appendix E.

3.6.3.2 Air Quality Determination of Effects

For this analysis, an effect pertaining to air quality was analyzed based on professional practice, and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.). An effect was considered significant if it would:

- conflict with, or obstruct implementation of, the applicable air quality plan;
- violate any air quality standard or substantial contribution to existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area under NAAQS and CAAQS;
- expose sensitive receptors to substantial pollutant concentrations;
- create objectionable odors affecting a substantial number of people;

The appropriate district-recommended emission thresholds as published in their respective CEQA guidance documents also apply to individual projects under their jurisdiction. For portions of the construction and operational activities that would occur in Yolo County, an air quality effect is considered to be significant if the air pollutant emissions would exceed YSAQMD's thresholds of significance as shown in Table 3.6-2. For portions of the construction activities that would occur within USACE's jurisdiction, an air quality effect is considered to be significant if the air pollutant emissions exceed the General Conformity thresholds.

3.6.3.3 Air Quality Effects and Mitigation Measures

3.6.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue, but there would be no construction-related emissions from program implementation or maintenance.

Without improvements to the levee system, the risk of levee failure would remain high. Under these conditions, any of the levee deficiencies could cause portions of the levees to fail, triggering widespread flooding and extensive damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up actions would require the use of a considerable amount of heavy construction equipment. Timing and duration of use would directly correlate with flood fighting needs, but it is likely that pollutants emitted would violate air quality standards for pollutants (including those for which the area is already considered non-attainment), increase GHG emissions, and expose sensitive receptors to toxic air emissions. Depending on the magnitude of the flood, flood fighting could last for weeks or even months. Furthermore, because of the unpredictable nature of an emergency response, no BMPs to manage emissions would be in place. All of these effects could be considered significant. However, the timing, duration, and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible. A discussion of the potential exposure to ruptured gas lines and utilities is provided in Section 3.17, Public Health and Hazards.

3.6.3.3.2 Flood and Recreation Program Alternatives

Effect AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan

A program or project is deemed inconsistent with an air quality plan if it would result in population or employment growth that exceeds the growth estimates in the applicable air quality plan—thus generating emissions not accounted for in the applicable air quality plan emissions budget. Consequently, proposed programs need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rate included in the relevant air quality plan.

As described in Chapter 6, Growth-Inducing and Cumulative Effects, the implementation of the program might remove an obstacle for undeveloped lands in West Sacramento and make development easier or more attractive for these lands, which might result in population growth in these areas in the long term. The City is currently in the process of updating its 1994 General Plan. It is expected that the new General Plan will include the land use changes in these areas. Additionally, the 2035 Metropolitan Transportation Plan (Sacramento Area Council of Government 2008) has included the population projection of 278,786 people for Yolo County and 87,402 people for West Sacramento, which has accounted for the land development and population growth of these areas through 2035. The air quality conformity analysis as part of the 2035 Metropolitan Transportation Plan meets the emission conformity test for the Sacramento ozone non-attainment area. Therefore, the program would not conflict with or obstruct the implementation of air quality plans. This effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect AQ-1 Finding	With Mitigation
Less than significant	N/A

Effect AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds

Construction activities associated with proposed alternatives of the program would result in the temporary generation of ROG, NO_X, CO, PM2.5 and PM10 emissions from excavation, vegetation clearing, grading, cut-fill, motor vehicle exhaust associated with construction equipment, construction employee commute trips, material transport (especially on unpaved surfaces), and other construction activities.

Construction emissions generated from the construction sites and on-road vehicles traveling within Yolo County are subject to YSAQMD CEQA thresholds (as shown in Table 3.6-2); and construction emissions generated from on-road vehicles traveling within Sacramento County are subject to SMAQMD CEQA thresholds (as shown in Table 3.6-3). All construction emissions generated by the program components are subject to the General Conformity thresholds because USACE has jurisdiction over the entire program.

Depending on the actual project locations, construction schedule, proposed alternatives, and the magnitude of the construction, unmitigated construction emissions could potentially exceed the YSAQMD CEQA thresholds (as shown in Table 3.6-2). Unmitigated NO_X emissions, in particular, often exceed district thresholds when multiple pieces of construction equipment are operated simultaneously, and fugitive dust emissions (PM10 and PM2.5) can be high when large quantities of soil are excavated, transported, and placed. A more in-depth analysis of potential air quality effects should be performed to calculate construction emissions when a project is identified. If the unmitigated construction emissions exceed the YSAQMD CEQA thresholds (e.g., NO_X, ROG, and PM10) or General Conformity thresholds (e.g., NO_X, ROG, PM10, and PM2.5), Mitigation Measures AQ-MM-1 to AQ-MM-3 should be implemented.

Construction emissions generated from on-road vehicles traveling within Sacramento County are unlikely to exceed the SMAQMD NO_X threshold, if only a single levee project is conducted on any given day. However, it is theoretically possible to exceed the threshold if several program components are constructed on the same day. If the on-road construction emissions generated by multiple, simultaneous projects exceed the NO_X threshold, Mitigation Measure AQ-MM-4 should be implemented.

The unmitigated construction emissions (NO_X, ROG, PM10, and PM2.5) are less likely to exceed the General Conformity applicability thresholds. As analyzed in Chapters 4 and 5 for the two currently proposed EIPs, the mitigated construction emissions would be well below the thresholds. However, if the mitigated construction emissions from multiple, simultaneous project elements exceed these applicability thresholds then WSAFCA must conduct the consultation with the YSAQMD as required by the General Conformity Regulation. Any offset resulting from the implementation of Mitigation Measure AQ-MM-4 would not be considered for the General Conformity analysis.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks ▪ Developed water access ▪ Special projects	

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect AQ-2 Finding	With Mitigation
Significant	Potentially significant and unavoidable

Mitigation Measures

Mitigation Measure AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds

Unmitigated NO_X and ROG emissions from construction equipment tailpipes could potentially exceed the YSAQMD CEQA thresholds. Therefore, WSAFCA will require the construction contractor to implement feasible and reasonable measures to reduce public nuisance and tailpipe emissions from diesel-powered construction equipment. This requirement will be incorporated into the construction contracts.

Depending on the exceedance amounts of NO_X and ROG emissions, the WSAFCA will require the construction contractor to implement either or both of the following mitigation options.

Mitigation Measure AQ-MM-1a

According to the YSAQMD guideline (Yolo-Solano Air Quality Management District 2007), the project lead agency is encouraged to explore and incorporate mitigation measures as technology advances and less emissive products become available at lower costs.

The measures recommended by the YSAQMD are listed below.

- Reduce use, trips, and unnecessary idling of heavy equipment. Shut down idling equipment that is not used for more than 5 consecutive minutes as required by California law.
- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Use a modern equipment fleet meeting CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- Install emission control devices on older equipment to reduce CO, ROG, and NO_X emissions to levels equivalent to CARB's 1996 or newer certification standard.
- Locate stationary diesel-powered equipment and haul truck staging areas as far as practicable from sensitive receptors.
- Use existing power sources (e.g., power lines) or clean fuel generators rather than conventional diesel generators, when feasible
- Substitute gasoline-powered for diesel-powered equipment when feasible.
- Use reformulated and emulsified diesel fuels where feasible.
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Use aqueous diesel fuel where feasible.
- Use CARB and/or EPA-verified particulate traps and other appropriate controls (i.e. diesel oxidation catalyst or diesel particular filters) where feasible to reduce emissions of NO_X, diesel particulate, and other pollutants at the construction site.

Mitigation Measure AQ-MM-1b

In addition to above measures, the construction contractor could provide a plan, for approval by WSAFCA and YSAQMD, demonstrating that the heavy-duty off-road equipment to be used at the project sites, including owned, leased, and subcontractor equipment, will achieve a project-wide fleet-average reduction of 20% for NO_X and 45% for diesel particulate, compared to the most recent CARB fleet average at time of construction. A construction mitigation calculator may be downloaded from the SMAQMD web site to perform the fleet average evaluation (Sacramento Metropolitan Air Quality Management District 2009).

However, with the implementation of above mitigations, NO_X and ROG emissions from the construction of a project still might exceed YSAQMD thresholds, depending on the size of a proposed project and specific measures chosen to reduce the construction emissions.

Mitigation Measure AQ-MM-2: Implement Fugitive Dust Control Plan if Unmitigated Emissions Exceed PM10 or PM2.5 Thresholds

Uncontrolled fugitive dust emissions for the construction of the program could exceed the General Conformity threshold of 100 tons/year for PM 10 and PM2.5 and the YSAQMD's 80 pounds/day threshold for PM 10 and could cause ambient concentrations of PM 10 and PM2.5 to approach CAAQS and NAAQS limits. Therefore, fugitive dust emissions are considered a significant effect. The construction contractor will implement all applicable and feasible fugitive dust control measures

required by YSAQMD including those listed below. This requirement will be incorporated into the construction contract.

- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person would respond and take corrective action within 48 hours. The phone number of YSAQMD also will be visible to ensure compliance with the YSAQMD Rule 2.5, Nuisance.
- Water active unpaved areas at all construction sites at least twice daily in dry conditions, with the frequency of watering based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities and water all areas of disturbed soil under windy conditions (more than 20 miles per hour).
- Limit on-site vehicles to a speed that prevents visible dust emissions to extend beyond unpaved roads.
- Cover all trucks hauling dirt, sand, or loose materials.
- Cover active and inactive storage piles where appropriate.
- Cover or hydroseed unpaved areas that will remain inactive for extended periods.
- Apply soil stabilizers to active and inactive areas where appropriate.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Sweep streets if visible soil material is carried out from the construction site.
- Install wind fencing and phase-grading operations where appropriate.

Fugitive dust emissions from the construction of a project would be reduced to a less-than-significant level with the implementation of above mitigation.

As described in the General Conformity regulation, the mitigated fugitive dust emissions (PM 10 and PM2.5) are required to meet the General Conformity applicability thresholds, which would also be reduce to a less-than-significant level with the implementation of above mitigation.

Mitigation Measure AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents

The program proponent will provide advance written notification of the proposed construction activities to all residences and other air quality-sensitive uses within 500 feet of the construction site. Notification will include a brief overview of the proposed project and its purpose, as well as the proposed construction activities and schedule. It will also include the name and contact information of the program proponent's project manager or a representative for ensuring that reasonable measures are implemented to address the problem.

Mitigation Measure AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions

It is possible that on-road construction emissions, for vehicles traveling within the Sacramento County, could exceed the SMAQMD NO_X threshold. If on-road construction emissions exceed SMAQMD threshold levels, the project proponent will be required to pay an offsite mitigation fee. Prior to the approval of project plans or the issuance of grading permits, the project proponent will submit proof that the offsite air quality mitigation fee of $16,000 per ton of NO_X has been paid to SMAQMD and that the construction air quality mitigation plan has been approved by SMAQMD and

the lead agency. SMAQMD already has enacted a well-defined program to use NO_X offset fees received from applicants to fund regional NO_X emission reduction projects. Therefore, with the implementation of this mitigation, the air quality impact to SMAQMD would be reduced to a less-than-significant level.

Effect AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10

After the proposed alternatives are constructed, the program facilities will be generally maintained as needed. Maintenance work would be less extensive and would take place over a few days per year. In addition, maintenance and operational activities are part of the existing environmental baseline and thus would not create a substantial source of new emissions. This effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect AQ-3 Finding	With Mitigation
Less than significant	N/A

Effect AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions

Construction of the proposed alternatives would result in short-term diesel exhaust emissions from on-site heavy duty equipment. Diesel particulate matter (DPM) emissions from diesel-fueled engines (DPM) were identified as a TAC by CARB in 1998. Construction of alternatives would result in the generation of DPM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities.

The assessment of health risks associated with exposure to diesel exhaust typically is associated with chronic exposure, in which a 70-year exposure period is often assumed. However, while cancer can result from exposure periods of less than 70 years, acute exposure periods (i.e., exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in an increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposures periods that are chronic. Construction of the program is not expected to take place at the same construction site for more than 1 to 2 years and would be expected to use a limited number of pieces of heavy equipment at the same construction site. Although DPM emissions are not anticipated to result in an increased health risk, these emissions may still have an adverse effect on those people living near the construction site that have asthma and chronic bronchitis.

However, as required by CARB regulation, no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. In addition, implementation of Mitigation Measure AQ-MM-1 would further reduce exhaust emissions during construction and implementation of Mitigation Measure AQ-MM-3 would ensure the implementation of reasonable measures to address residents' health concerns related to construction emissions. With implementation of mitigation measures and best management practices, the effect would be reduced to less than significant and no further mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect could occur in all nine program reaches, depending on the location of sensitive receptors.

Effect AQ-4 Finding	With Mitigation
Less than significant	N/A

Effect AQ-5: Exposure to Objectionable Odors from Diesel Exhaust

The program implementation would not result in any major sources of odor, and the program would not involve operation of any of the common types of facilities that are known to produce odors (e.g.,

landfill, wastewater treatment facility). In addition, odors associated with diesel exhaust from the use of on-site construction equipment would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.

Furthermore, as required by CARB regulation, no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. Implementation of Mitigation Measures AQ-MM-1 and AQ-MM-3 would further reduce exhaust emissions during construction. This effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect AQ-5 Finding	With Mitigation
Less than significant	N/A

3.6.3.4 Climate Change Assessment Methods

Almost all increased GHG emissions associated with the proposed program would be generated by construction-related activities. Therefore, the focus of the GHG analysis is to evaluate construction-related emissions. The principal source of GHG emissions associated with program implementation would be temporary tailpipe emissions from construction equipment and haul trucks; the principal GHG produced would be CO_2. No air district in California, including YSAQMD, has formally adopted a significant threshold for analyzing GHG or CO_2 emissions generated by a proposed project, or a methodology for analyzing air quality effects related to global warming. However, CARB and the major air quality agencies in the state (Bay Area Air Quality Management District [BAAQMD], South Coast Air Quality Management District [SCAQMD] and San Joaquin Valley Air Pollution Control District [SJVAPCD]) have published draft thresholds for defining the significance of GHG emissions from construction projects and operational projects. Those draft thresholds and mitigation measures were used in the analysis of effects related to climate change.

There are nine levee reaches in the study area. Depending on the deficiencies, a number of alternatives or combination of alternatives can be constructed to address the deficiencies along each reach. For the purposes of the climate change analysis, levee alternatives that would be constructed in the same time under the same project should be evaluated together, which could include alternatives that occur at multiple locations or along multiple reaches, depending on the scale of a project. At this time, the actual project locations, construction schedule, proposed alternatives, and the magnitude of the construction have not been determined for the program. Therefore, to assess the significance of the forecast program-wide GHG emissions, the emission estimates for two currently-proposed EIPs were considered, and then extrapolated to estimate the program-wide GHG emissions.

To assist in the determination of effects, various quantitative models are available to predict emissions; URBEMIS and SacREM. As described in Section 3.6.3.1, Air Quality Assessment Methods, those two models were used for quantitative determination of effects, effect findings, and mitigation efficacy.

3.6.3.5 Climate Change Determination of Effects

For this analysis, an effect pertaining to air quality was analyzed based on professional practice, draft NEPA Guidance published by CEQ, and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.). An effect was considered significant if it would:

- generate GHG emissions that may have a significant impact on the environment;
- conflict with an applicable plan adopted for the purpose of reducing GHG emissions.

3.6.3.6 Climate Change Effects and Mitigation Measures

3.6.3.6.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue, but there would be no construction-related emissions from program implementation or maintenance.

Without improvements to the levee system, the risk of levee failure would remain high. Under these conditions, any of the levee deficiencies could cause portions of the levees to fail, triggering widespread flooding and extensive damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up actions would require the use of a considerable amount of heavy construction equipment. Timing and duration of use would directly correlate with flood fighting needs, but it is likely that pollutants emitted would violate air quality standards for pollutants (including those for which the area is already considered non-attainment), increase GHG emissions, and expose sensitive receptors to toxic air emissions. Depending on the magnitude of the flood, flood fighting could last for weeks or even months. Furthermore, because of the unpredictable nature of an emergency response, no BMPs to manage emissions would be in place. All of these effects could be considered significant. However, the timing, duration, and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

3.6.3.6.2 Flood and Recreation Program Alternatives

Effect CC-1: Increase in Greenhouse Gas Emissions during Construction

The principal source of GHG associated with program implementation would be temporary tailpipe emissions from construction equipment and haul trucks. Because the principal source of emissions would be internal combustion, the principal GHG produced would be CO_2. No air district in California, including YSAQMD, has formally adopted a significance threshold for analyzing GHG or CO_2 emissions generated by a proposed project or a methodology for analyzing air quality effects related to global warming. However, CARB and the major air quality agencies in the state (BAAQMD, SCAQMD] and SJVAPCD) have published draft thresholds for defining the significance of GHG emissions from construction projects and operational projects. Table 3.6-6 summarizes the currently proposed thresholds as published by those air quality agencies.

Table 3.6-6. Currently Proposed GHG Significance Thresholds

	GHG Threshold for Long-Term Operational Phase (metric tons/year of CO_2-equivalnet		
Air Quality District	Industrial Projects	Commercial and Residential Projects	GHG Threshold for Temporary Construction Projects
BAAQMD 2009	10,000	1,100	Best management practices for biofuel use and waste recycling
SCAQMD 2008	10,000	3,000	30-year amortization of total construction emissions, with the amortized value compared to the appropriate Industrial or Commercial/Residential threshold.
SJVAPCD 2009	7,000	Not yet proposed	Not yet proposed
CARB 2008	7,000	Not yet proposed	Not yet proposed

It is possible that proposed projects may be subject to the future GHG regulations at the time of project-level permitting and construction.

Because GHG emitted from an individual project will persist in the atmosphere for over 100 years and contribute to long-term climate change, the assessment of GHG impacts should be evaluated based on the combined projects comprising the overall levee improvement program, rather than the individual projects. The program is designed to improve roughly 50 miles of levee, with a design life of roughly 50 years. Thus, for purposes of comparing to the GHG significance thresholds in Table 3.6-6, the combined emissions from the 50-mile program should be considered, and amortized over the 50-year design life of the project. Assuming the levee improvement program is an industrial project, the most restrictive GHG emission threshold listed in Table 3.6-6 is 7,000 metric tons per year, amortized over the 50-year design life.

To assess the significance of the forecast program-wide GHG emissions, the emission estimates for the two currently-proposed EIPs were considered, and then extrapolated to estimate the program-wide emissions. The estimated emissions are as follows:

- CHP Academy EIP. This 4,500-foot project is forecast to emit 1,290 tons (1,170 metric tons) of GHG from direct and indirect sources (see Section 4.83.2 in the Air Quality and Climate Change section).

- The Rivers EIP. This 6,500-foot project is forecast to emit 1,786 tons (1,620 metric tons) of GHG (see Section 5.83.2 in the Air Quality and Climate Change section).

Based on the average of those two individual projects, future levee improvements are expected to emit 1,340 metric tons of GHG per mile of levee improvement. By extrapolating that value over the 50-mile levee reach, the overall improvement program is expected to generate a total of 67,000 metric tons of GHG. Amortized over the 50-year design life for the levee program, the equivalent annual GHG emission rate would be 1,340 metric tons per of CO_2–equivalent.

The amortized 50-year average GHG emission rate of 1,340 metric tons per year is considerably lower than the presumptive significance threshold of 7,000 metric tons per year. Therefore, based on this preliminary emission calculation the GHG impacts caused by emissions from the overall program are considered to be less than significant. If future refined emission forecasts indicate the program-wide emissions could exceed the presumptive emission threshold, then mitigation measure AQ-MM-5 would be implemented. After implementation of the mitigation measure the effects would be less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect CC-1 Finding	With Mitigation
Potentially significant	Less than significant

Mitigation

Mitigation Measure CC-MM-1: Implement Measures to Minimize Greenhouse Gas Emissions during Construction

The following measures could be considered to lower GHG emissions during the construction. These mitigation measures combine the most stringent aspects of the currently proposed mitigation measures published by BAAQMD (2009) and SCAQMD (2008).

- Comply with all applicable future GHG regulations at the time of project-level permitting and construction.
- Use biodiesel fuel to fuel a substantial portion of the diesel-powered equipment and vehicles (e.g., 15% of the vehicles, as proposed by the BAAQMD). However, it is important to note that according to a recent EPA report (U.S. Environmental Protection Agency 2009b), some renewable fuels (e.g., ethanol and recycled vegetable oil biodiesel) could result in less GHG emissions than petroleum fuels, while some renewable fuels (e.g., soy-based biodiesel) might increase GHG emissions. Therefore, the construction contractors should be cautious with the use of appropriate biodiesel fuels, and should avoid using soy-based biodiesel as an attempt to reduce GHG emissions.
- Encourage construction workers to carpool.
- Recycle at least 50% of construction waste and demolition debris.
- Purchase at least 10% of the building materials and imported soil from sources within 100 miles of the project site.
- Purchase GHG offset for program-wide GHG emissions (direct emissions plus indirect emissions from on-road haul trucks plus commute vehicles) exceeding future state or Federal significance thresholds applicable at the time of construction. If no GHG significance thresholds have been formally adopted at the time of permitting, then a presumptive GHG threshold of 7,000 metric tons CO_2-equivalent (amortized over the 50-year life of the levee program) should be used to define the offset requirement. The 7,000 metric ton presumptive threshold matches the lowest industrial project threshold that has been proposed by any air quality agency in California as of the date of this study (Table 3.6-6). All purchased offsets must be verifiable under protocols set by the California Climate Action Registry, the Chicago Climate Exchange, or comparable auditing programs.

Implementation of these mitigation measures would reduce the impacts to a less-than-significant level.

Effect CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The WSLIP does not pose any apparent conflict with the goals of AB 32, the key elements and GHG reduction measures in the Climate Change Scoping Plan, or any other plans for reduction or mitigation of GHGs. To date, no federal, state, or local agency with jurisdiction over the WSLIP has adopted plans or regulations that set specific goals for emission limits or emission reductions applicable to construction projects similar to the levee improvements projects that would be proposed under the WSLIP. As described in Effect AQ-6, the average forecast emissions from the implementation of the WSLIP were compared to conservatively low presumptive significance thresholds that were derived from the draft GHG guidelines published by several local air quality

agencies. The forecast emission rates are well below the presumptive significant threshold. Therefore, the overall WSLIP would not conflict with or obstruct the implementation of greenhouse gas emission reduction plans. This effect is less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect CC-2 Finding	With Mitigation
Less than significant	N/A

Effect CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change

Global climate change could affect the hydrology of the Sacramento River, including the frequency of future flood events and the intensity of future flood events. As described in Section 3.2, Flood Control and Geomorphology, Projections of Future Mean Sea Level Change (p.3.2-51), the WSLIP program area is relatively insensitive to the projected changes in sea level rise. In the program area, the Port of Sacramento and the DWSC see the largest increases resulting from sea-level rise. The DWSC is primarily backwater controlled and is hydraulically connected to the rest of the flood system fairly close to the sea (i.e., North Delta). The WSLIP design for the DWSC indicates there is adequate freeboard available to accommodate a water surface increase of the magnitudes reported herein due to sea-level rise and still maintain the minimum project design freeboard of three feet. This effect is less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect CC-3 Finding	With Mitigation
Less than significant	N/A

Section 3.7

Noise

3.7.1 Introduction

This section describes the regulatory and environmental setting for noise, effects on noise that would result from the proposed program, and mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed and briefly described below.

- *City of Sacramento General Plan* Noise Element (City of Sacramento 1988).
- City of Sacramento noise ordinance (City of Sacramento 1977).
- *City of West Sacramento General Plan* Noise Element (City of West Sacramento 2004).
- City of West Sacramento noise ordinance (City of West Sacramento 1994).
- *Yolo County General Plan* Noise Element (County of Yolo 1983).
- *Solano County General Plan* Noise Element (County of Solano 2008).
- Roadway Construction Noise Model User's Guide (Federal Highway Administration 2006).
- Noise control for buildings, manufacturing plants, equipment, and products (Hoover & Keith 2008).

3.7.2 Affected Environment

3.7.2.1 Fundamentals of Noise and Vibration

3.7.2.1.1 Noise

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, the logarithmic decibel scale is used to keep sound intensity numbers at a convenient and manageable level.

The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called "A-weighting." Since humans are less sensitive to low frequency sound than to high frequency sound, A-weighted decibel (dBA) levels de-emphasize low frequency sound energy to better represent how humans hear. Table 3.7-1 summarizes typical A-weighted sound levels.

Table 3.7-1. Typical A-weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: California Department of Transportation 1998.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (L_{xx}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). Below are brief definitions of these measurements and other terminology used in this section:

- **Sound.** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Ambient noise.** The composite of noise from all sources near and far in a given environment exclusive of particular noise sources to be measured.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- **A-weighted decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent sound level (L_{eq}).** The average of sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
- **Exceedance sound level (L_{xx}).** The sound level exceeded XX percent of the time during a sound level measurement period. For example, L_{90} is the sound level exceeded 90 percent of the time, and L_{10} is the sound level exceeded 10 percent of the time. L_{90} is typically considered to represent the ambient noise level.
- **Maximum and minimum sound levels (L_{max} and L_{min}).** The maximum or minimum sound level measured during a measurement period.
- **Day-night level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community noise equivalent level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment. In general, human sound perception is such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving sound level.

For a point source such as a stationary compressor, sound attenuates based on geometry at rate of 6 dB per doubling of distance. For a line source such as free- flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance. Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travel over a hard surface such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers such as buildings and topography that block the line of site between a source and receiver also increase the attenuation of sound over distance.

Auditory and non-auditory effects can result from excessive or chronic exposure to elevated noise levels. Auditory effects of noise on people can include temporary or permanent hearing loss. Non-auditory effects of exposure to elevated noise levels include sleep disturbance, speech interference, and psychological effects, such as annoyance. Land use compatibility standards for noise are typically based on research related to these non-auditory effects.

3.7.2.1.2 Vibration

Operation of heavy construction equipment, particularly pile driving and other impulsive devices such as pavement breakers, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of

structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance.

As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second [in/sec]) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (ppv). Table 3.7-2 summarizes typical vibration levels generated by construction equipment (Federal Transit Administration 2006).

Table 3.7-2. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet
Pile driver (impact)	0.644 to 1.518
Pile drive (sonic)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Federal Transit Administration 2006.

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions. PPV_{ref} is the reference ppv at 25 feet from Table 3.7-2:

$$PPV = PPV_{ref}\left(\frac{25}{distance}\right)^{1.5}$$

Table 3.7-3 summarizes typical human response to steady state vibration such as that produced by typical non-impact construction activity.

Table 3.7-3. Human Response to Steady State Vibration

PPV	Human Response
3.6 (at 2 Hz) – 0.4 (at 20 Hz)	Very disturbing
0.7 (at 2 Hz) – 0.17 (at 20 Hz)	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible

Source: California Department of Transportation 2004.

Table 3.7-4 summarizes typical human response to transient vibration that is usually associated with transitory impact construction sources such as pile driving activity.

Table 3.7-4. Human Response to Transient Vibration

PPV	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible

Source: California Department of Transportation 2004.

3.7.2.2 Regulatory Setting

3.7.2.2.1 Federal

There are no Federal noise regulations applicable to the proposed program.

3.7.2.2.2 State

There are no state noise standards that would apply directly to the program. The *General Plan Guidelines* published by the Governor's Office of Planning and Research (2003) include recommendations for maximum noise exposure based on type of land use. These recommendations are available for counties and cities to adopt as part of their state-mandated requirement in establishing policies and standards in their general plans regarding incompatibility issues between land uses as it relates to noise exposure.

There are no applicable Federal, state, or local quantitatively-defined regulations relating to vibration resulting from construction activities. Thresholds for annoyance and structural damage reported by Caltrans (2004) are used in this analysis. Tables 3.7-3 and 3.7-4 summarize human response/annoyance thresholds. Table 3.7-5 summarizes vibration damage thresholds.

Table 3.7-5. Maximum Vibration Levels for Preventing Damage to Structures

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2 to 0.3
Residential buildings in good repair with gypsum board walls	0.4 to 0.5
Engineered structures, without plaster	1.0 to 1.5

Source: California Department of Transportation 2004.

3.7.2.2.3 Local

The program area spans several local municipalities including the City of West Sacramento, as well as Yolo and Solano counties. Program noise also has the potential to affect land uses and noise-

sensitive receptors in the City of Sacramento. Each of these local governments has established goals and policies relating to community noise exposure. They are summarized below.

City of West Sacramento Noise Ordinance

Most of the levee alternatives for the proposed program would be done within the City of West Sacramento. The City noise ordinance is the primary enforcement tool for the operation of locally regulated noise sources, such as construction activity or outdoor recreation facilities, and is set forth in Chapter 17.32 of the City Code. The City noise ordinance sets noise level performance standards for non-transportation noise sources, which are summarized in Table 3.7-6. Examples of non-transportation noise sources include construction equipment, industrial operations, outdoor recreation facilities, HVAC units, and loading docks. The City of West Sacramento's noise ordinance does not specify an exemption for temporary daytime construction activity, so all construction associated with the proposed program must comply with the daytime and nighttime noise limits listed in Table 3.7-6.

Table 3.7-6. City of West Sacramento Non-Transportation Noise Level Standards

		Exterior Noise Levels		Interior Noise Levels	
Land Use	Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Residential	Hourly L_{eq}, dBA	50	45	45	35
	Max. Level, dBA	70	65	–	–
Transient Lodging	Hourly L_{eq}, dBA	–	–	45	35
Hospital, nursing homes	Hourly L_{eq}, dBA	–	–	45	35
Theatres, auditoriums, music halls	Hourly L_{eq}, dBA	–	–	35	35
Churches, meeting halls	Hourly L_{eq}, dBA	–	–	40	40
Office buildings	Hourly L_{eq}, dBA	–	–	45	45
Schools, libraries, museum	Hourly L_{eq}, dBA	–	–	45	45

Source: City of West Sacramento 1994.

Note: Each of the noise levels specified above will be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercials uses (e.g., caretaker dwellings)

In addition, the City Code stipulates that no operation shall be installed which by its construction or nature habitually or consistently produces noticeable vibration beyond the property line. As is discussed above, vibration from non-impact construction equipment (which typically produces steady state vibration) is not anticipated to result in a significant effect. As indicated in Table 3.7-4, human response to transient vibration sources (such as impact pile driving) typically becomes "distinctly perceptible" at or above 0.24 in/sec ppv (California Department of Transportation 2004).

West Sacramento General Plan

The primary purpose of the Noise Element of the *West Sacramento General Plan* is to protect city residents from the harmful effects of excessive noise (City of West Sacramento 1990). To this end,

the Noise Element serves to set acceptable limits for the land use compatibility of new developments or land uses as it relates to noise exposure. The Noise Element sets the following policies for new development and planning purposes that may relate to the proposed program.

Policies

Policy 2: Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards if Table II-4 [Table 3.7-7] at existing or planned uses shown in Table II-4 [Table 3.7-7], an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table II-4 [Table 3.7-7] as measured immediately within the property line of land uses designated in Table II-4 [Table 3.7-6].

Policy 4: New development of land uses contained in Table II-6 [Table 3.7-7] will not be permitted in areas exposes to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table II-6 [Table 3.7-8]. Where the land uses contained in Table II-6 [Table 3.7-8] are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table II-6 [Table 3.7-8], an acoustical analysis shall be required and appropriate mitigation shall be included in the project design.

Policy 7: Where noise mitigation measures are required to achieve the standards of Tables II-4 [Table 3.7-6] and II-6 [Table 3.7-7], the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

In addition to the policies set forth in the *West Sacramento General Plan*, the *City of West Sacramento General Plan Background Document* states that "Sporting events such as softball games are conducted at city parks, with some games played at night. Public reaction to the noise produced by such activities may range from supportive to antagonistic, depending upon individual perceptions. In any case, late-night games with their attendant crowd noise and traffic can be annoying to nearby residents. To guard against adverse public reaction to nighttime sporting events at city parks, activities and use of public address systems should be limited to 10:00 p.m. or 11:00 p.m., depending upon neighborhood reactions. New facilities for sporting events should be designed to control crowd and public address system impacts."

Table 3.7-7. City of West Sacramento Maximum Allowable Noise Exposure—Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	–
Transient Lodging	60[3]	45	–
Hospitals, nursing homes	60[3]	45	–
Theatres, auditoriums, music halls	–	–	35
Churches, meeting halls	60[3]	–	40
Office buildings	–	–	45
Schools, libraries, museum	–	–	45
Playgrounds, neighborhood parks	70	–	–

Note:
[1] Where the location of outdoor activity is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
[2] As determined for a typical worst-case hour during period of use.
[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed, provided that practical exterior noise level reduction measures have been implemented and that interior noise levels are in compliance with this table. An exterior noise level of 70 dB Ldn/CNEL shall be allowed in the triangle specific plan area and the Washington specific plan area.

Solano County

Minor amounts of levee improvement would be done in unincorporated Solano County under the proposed program. Solano County has not established a noise ordinance that sets numerical or qualitative limits on the construction noise that would be generated by the proposed program. The primary purpose of the noise section of the Public Health and Safety Chapter of the *Solano County General Plan* is to develop strategies for reducing excessive noise exposure through cost-effective measures and appropriate zoning that avoids placing incompatible land uses in proximity of each other. The General Plan has established interior and exterior noise level standards for new land use and development proposals in terms of acceptable noise exposure. These standards would not apply directly to the program.

Yolo County

Minor amounts of levee improvement would be done in unincorporated Yolo County under the proposed program. To date, Yolo County has not adopted a noise ordinance that sets numerical or qualitative limits on the construction noise that would be generated by the proposed program. The *Yolo County General Plan* sets forth policies relating to noise, including a policy that Yolo County will adopt a comprehensive noise ordinance. Yolo County is currently in the process of a general plan update.

City of Sacramento Noise Ordinance

The proposed program does not include any levee alternatives within the City of Sacramento, but some construction would be done directly across the river from homes in Sacramento. The City of Sacramento's noise ordinance limits described below have been used in this EIR as a noise impact criterion for homes inside the city.

The City of Sacramento noise ordinance is the primary enforcement tool for the operation of locally regulated noise sources, such as construction activity, and is set forth in Chapter 8.68 of the City Code. The noise ordinance sets exterior noise level standards for noise sources that affect residential or agricultural property. These exterior noise level performance standards are summarized in Table 3.7-8. Noise associated with the erection (including excavation), demolition, alteration, or repair of any structure occurring between 7:00 a.m. and 6:00 p.m., Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday is exempted from the provisions of the City noise ordinance.

Table 3.7-8. City of Sacramento Exterior Noise Level Standards

Cumulative Duration of the Intrusive Sound in Any One Hour	Daytime[1] (7:00 a.m. to 10:00 p.m.)	Nighttime[1] (10:00 p.m. to 7:00 a.m.)
30 Minutes	55	50
15 Minutes	60	55
5 Minutes	65	60
1 Minute	70	65
Level not to be exceeded	75	70
Resultant 1-hour L_{eq}	59	54

Source: City of Sacramento 1977.

Notes:

Each of the noise limits specified shall be reduced by five dBA for impulsive or simple tone noise, or for noises consisting of speech or music;

If the ambient noise level exceeds that permitted by any of the first four noise level categories, the allowable noise limit shall be increased in five dB increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

City of Sacramento General Plan

The Noise Element of the *City of Sacramento General Plan* establishes interior and exterior noise level standards for planning purposes to ensure land use compatibility for new zoned developments as it relates to noise exposure. The City of Sacramento is currently in the process of a general plan update. The Noise Element sets noise level standards for new development and planning purposes, which do not pertain directly to the proposed program.

3.7.2.3 Environmental Setting

Noise-sensitive land uses are those locations where noise can interfere with primary activities. These used include places where people sleep, such as residences and hospitals. Other noise-sensitive uses include schools, libraries, places of worship, and areas of recreation during hours of

normal human use. Vibration-sensitive uses are similar to noise-sensitive uses, but are in large part limited to residential, historical structures, and vibration-sensitive technical facilities (i.e., biomedical research).

Noise-sensitive land uses within the program vicinity are primarily residential. Other noise-sensitive land uses include schools (i.e., Riverbank Elementary), hospitals (i.e., Sutter Health), hotels and motels (i.e., Embassy Suites Riverfront Promenade), and areas of recreation (i.e., Bryte Park and the Jedediah Smith Recreational Trail).

Primary noise sources in the program vicinity include vehicular traffic on highways (i.e., I-80, I-5, SR 84, SR 275—Tower Bridge Gateway, and US 50) and local roadways, and industrial and agricultural operations. Secondary noise sources include airplane flyovers (i.e., to and from the CHP Academy and Sacramento Executive), boating traffic on the Sacramento River, Raley Field, and miscellaneous community noise sources such as dogs or property maintenance.

Population density and ambient noise levels tend to be closely correlated. Areas that are not urbanized are relatively quiet, while areas that are more urbanized are subjected to higher noise levels due to roadway traffic, industrial activities, and other human activities. Table 3.7-9 summarizes typical ambient noise levels based on population density.

Table 3.7-9. Population Density and Associated Ambient Noise Levels

	dBA, L_{dn}
Rural	40–50
Small town or quiet suburban residential	50
Normal suburban residential	55
Urban residential	60
Noisy urban residential	65
Very noise urban residential	70
Downtown, major metropolis	75–80
Adjoining freeway or near a major airport	80–90

Sources: Hoover and Keith 2008.

As land use classifications and densities vary widely throughout the program area, so does the existing noise environment. Existing noise levels are relatively low in rural areas (40 to 50 L_{dn}) and can be in the range 80 to 90 L_{dn} in locations nearest major highways with larger traffic volumes, such as I-80.

3.7.3 Environmental Consequences

This section describes the potential effects on noise from implementation of the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.7.3.1 Assessment Methods

This analysis focuses on the potential construction-related and operational noise effects associated with the program and its alternatives. Methods recommended by the Federal Transit Administration have been used to assess construction noise. Potential noise effects associated with construction activities have been evaluated by assuming the simultaneous operation of multiple pieces of heavy equipment as a reasonable upper bound for noise effects. For the program level environmental consequences, specific site plan drawings and project-level information are not yet available. Therefore, it is assumed that construction activities may occur at any point along a given levee reach.

Temporary groundborne vibration from construction activity has also been assessed using methods *recommended by the Federal Transit Administration (2006).

3.7.3.2 Determination of Effects

The environmental checklist in the State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) provides guidance to be used in determining the significance of noise effects. A noise effect is normally considered significant if it would:

- expose persons to or generate noise levels in excess of applicable standards;
- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- expose persons to vibration or generation of excessive groundborne noise levels;
- expose people residing or working in the area to excessive noise levels, for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport; or
- expose people residing or working in the project area to excessive noise levels, for a project within the vicinity of a private airstrip.

For the purposes of this analysis, a noise or vibration effect is considered to be significant if:

- construction noise levels exceed allowable numerical limits specified by the City of West Sacramento or the City of Sacramento, for receivers in those jurisdictions.
- construction noise levels at receivers located where there are no numerical noise limits (i.e., other than the cities of West Sacramento or Sacramento) exceed 70 dBA L_{eq} during the day, or 60 dBA L_{eq} at night. Those noise criteria were established for this analysis based on recommended values by the Federal Transit Administration 2006, adjusted downward by 10 dBA to account for the relatively quiet baseline conditions throughout the study area.
- construction vibration ppv would exceed 0.2 in/sec (potential damage at plaster-walled structures) or 0.24 in/sec (human response threshold for “distinctly perceptible” due to transient vibration sources) at any structure or occupied building. 0.2 in/sec will be the governing threshold for assessing the significance of vibration.

3.7.3.2.1 Effect Assumptions

The following assumptions regarding program effects on noise in the study area have been made for this analysis:

- The program does not propose to introduce any new noise-sensitive uses where people would live or work into the program area. There are no significant sources of groundborne vibration associated with operation of the program. Therefore, operation of the program would have no effect related to the exposure of persons to, or generation of excessive groundborne vibration or groundborne noise levels.
- Groundborne noise occurs when groundborne vibration causes the ground surface and structures to radiate audible acoustical energy. It is primarily an issue for underground rail systems and is not a concern for groundborne noise generated by construction or maintenance equipment because airborne noise from construction and maintenance equipment typically overshadows the groundborne noise generated by the equipment. Accordingly, groundborne noise is not considered further in this analysis.
- The maintenance of certain levee alternatives would involve intermittent vehicular trips to inspect the proper functioning of the alternative and/or light mechanical equipment operation to conduct vegetative weeding, irrigation, repair or cleaning activities as needed. These intermittent vehicular trips and light maintenance activities, by their very nature and frequency, are considered less than significant.
- There are no significant sources of groundborne vibration associated with operation of the proposed project. Therefore, operation of the proposed project would have no effect related to the exposure of persons to, or generation of excessive groundborne vibration or groundborne noise levels and evaluation of this effect is not applicable, and is not discussed further.

3.7.3.3 Effects and Mitigation Measures

3.7.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of flood program alternatives to increase the level of protection. Current levee operations and maintenance activities would continue, but there would be no noise or vibration associated with new construction or operational activities.

Without improvements to the levee system, the risk of levee failure would remain high. Under these conditions, any of the levee deficiencies could cause portions of the levees to fail, triggering widespread flooding and extensive damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up actions would require the use of a considerable amount of heavy construction equipment. Timing and duration of use would directly correlate with flood fighting needs, but could last for days, weeks, even months. Depending on the magnitude of the flood, people may or may not be present during flood fighting activities. If flooding occurred only in West Sacramento, nearby Sacramento residents could still be residing and working near a clean-up area, exposing them to excessive noise and vibration levels for extended periods of time. Furthermore, because of the unpredictable nature of an emergency response, compliance with local noise ordinances and implementation of BMPs to manage noise levels would not be possible. All of these effects could be

considered significant. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

3.7.3.3.2 Proposed Construction Activities

All flood program alternatives (as well as the construction of certain recreation program elements such as trails, parks, kiosks, amphitheaters, boat launches, docks and piers) would require the use of heavy construction equipment. Additionally, the operation of heavy equipment may generate groundborne vibration that could be perceptible at residences or other sensitive land uses close to construction activity. Vibration levels due to standard construction activity, aside from pile driving, are generally in the range of 0.035 to 0.21 in/sec ppv at a distance of 25 feet (Federal Transit Administration 2006). Vibration levels caused by pile driving are typically higher and will depend on many factors, including the type of pile driving method (impact, vibratory, or sonic), the type and length of piles, the distance to the nearest sensitive receptor, and the soil strata conditions. In general, vibration levels due to pile driving are approximately 0.644 to 1.518 inches per second ppv for impact pile driving and 0.170 to 0.734 in/sec ppv for sonic (vibratory) pile driving (Federal Transit Administration 2006).

Table 3.7-10 summarizes typical construction noise emission levels for various types of equipment likely to be used throughout the course of the program.

Table 3.7-10. Typical Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (L_{max})[1]	Equipment	Typical Noise Level (L_{max})[1]
Air compressor	78	Grader	85
Auger drill rig	84	Haul truck[2]	76
Backhoe	78	Maintainer[5]	77
Batch plant	83	Paver	77
Compactor	83	Pickup truck	75
Crane	81	Pile driver (impact)	101
Dozer	82	Trackhoe[4]	78
Dump truck	76	Sand blasting	96
Excavator	81	Scraper	84
Forklift[3]	75	Soil mix drill rig	80
Front-end loader	79	Water truck[2]	76

Source: Federal Highway Administration 2006.

[1] dBA, A-weighted decibel level, measured at 50 feet.

[2] Based on data for dump truck.

[3] Based on data for pickup truck.

[4] Based on data for backhoe.

[5] Based on data for paver.

The following discussion provides a brief description of the various treatments proposed and the corresponding noise level projections based on a construction site situation assuming the simultaneous operation in one location of the three loudest pieces of construction equipment.

Adjacent, Full and In Place Levee Raises, Setback Levee, Flood Wall, Seepage Berm, Interior Drain, Stability Berm Treatments

Construction of the three levee raise options (full, adjacent, and in place), the setback levee, the flood wall, the seepage berm, the interior drain, and the stability berm treatment options would all require the use of bulldozers, motor graders, sheepsfoot compactors, and haul trucks. Certain treatment options listed above may also involve the use of water trucks. The flood wall treatment option would require the use of a crane. The three loudest pieces for all of the above-mentioned treatment options would likely be the grader, compactor, and dozer. Table 3.7-11 summarizes projected noise levels for these pieces of equipment at various distances. These noise levels are also generally representative of noise levels that could occur at staging areas.

Table 3.7-11. Projected Construction Noise Levels due to a Grader, Compactor, and Dozer in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	88	84
100	-6	-2	80	76
200	-12	-4	73	68
300	-16	-5	68	63
400	-18	-6	65	60
500	-20	-6	62	57
600	-22	-7	60	55
700	-23	-7	58	54
800	-24	-7	57	52
900	-25	-8	55	51
1000	-26	-8	54	50
1100	-27	-8	53	48
1200	-28	-9	52	48
1300	-28	-9	51	47
1400	-29	-9	50	46
1500	-30	-9	50	45
1600	-30	-9	49	44
1700	-31	-9	48	44
1800	-31	-10	48	43
1900	-32	-10	47	42
2000	-32	-10	46	42
3000	-36	-11	42	37

Calculations based on Federal Transit Administration 2006.
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Slope Flattening

Construction equipment proposed for use under the slope flattening treatment option includes motor graders, sheepsfoot rollers, haul trucks, and water trucks. Table 3.7-12 summarizes noise levels projected from the simultaneous use of a grader, roller, and large truck (haul or water truck).

Table 3.7-12. Slope Flattening: Projected Construction Noise Levels due to a Grader, Roller, and Large Truck in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	87	82
100	-6	-2	79	74
200	-12	-4	71	66
300	-16	-5	66	62
400	-18	-6	63	58
500	-20	-6	60	56
600	-22	-7	58	54
700	-23	-7	57	52
800	-24	-7	55	51
900	-25	-8	54	49
1000	-26	-8	53	48
1100	-27	-8	51	47
1200	-28	-9	50	46
1300	-28	-9	50	45
1400	-29	-9	49	44
1500	-30	-9	48	43
1600	-30	-9	47	43
1700	-31	-9	47	42
1800	-31	-10	46	41
1900	-32	-10	45	41
2000	-32	-10	45	40
3000	-36	-11	40	36

Calculations based on Federal Transit Administration 2006.
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Rock Slope Protection

This treatment option would involve protection of portions of a given levee through the method of stone placement. Construction equipment proposed for use under the rock slope protection treatment includes one excavator and one loader. Table 3.7-13 summarizes noise levels projected from these pieces of equipment at various distances.

Table 3.7-13. Rock Slope Protection: Projected Construction Noise Levels due to an Excavator and a Loader

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	83	79
100	-6	-2	75	71
200	-12	-4	67	63
300	-16	-5	63	59
400	-18	-6	59	56
500	-20	-6	57	53
600	-22	-7	55	51
700	-23	-7	53	49
800	-24	-7	52	48
900	-25	-8	50	46
1000	-26	-8	49	45
1100	-27	-8	48	44
1200	-28	-9	47	43
1300	-28	-9	46	42
1400	-29	-9	45	41
1500	-30	-9	44	41
1600	-30	-9	44	40
1700	-31	-9	43	39
1800	-31	-10	42	38
1900	-32	-10	42	38
2000	-32	-10	41	37
3000	-36	-11	37	33

Calculations based on Federal Transit Administration 2006.

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Sheet Pile Wall

Under this treatment option, sheet piles would be driven into the levee crown by a hydraulic or pneumatically-operated pile driving head attached to a crane. If the levee material is particularly solid, pre-drilling may be necessary. The pre-drilling of pile holes would reduce the number of impacts needed during pile driving activities and would reduce the overall duration of noise and vibration exposure to surrounding sensitive receptors, thus lessening the overall program effect. Additionally, a haul truck would be required to deliver materials. Table 3.7-14 summarizes noise levels projected from the simultaneous use of a crane, haul truck, and impact pile driver at various distances.

Table 3.7-14. Sheet Pile Installation: Projected Construction Noise Levels due to a Crane, Haul Truck, and Impact Pile Driver in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	101	94
100	-6	-2	93	86
200	-12	-4	85	78
300	-16	-5	81	74
400	-18	-6	77	70
500	-20	-6	75	68
600	-22	-7	73	66
700	-23	-7	71	64
800	-24	-7	70	63
900	-25	-8	68	61
1000	-26	-8	67	60
1100	-27	-8	66	59
1200	-28	-9	65	58
1300	-28	-9	64	57
1400	-29	-9	63	56
1500	-30	-9	62	55
1600	-30	-9	62	55
1700	-31	-9	61	54
1800	-31	-10	60	53
1900	-32	-10	60	53
2000	-32	-10	59	52
3000	-36	-11	55	48

Calculations based on Federal Transit Administration 2006.
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Slurry Cutoff Wall

There are two methods for constructing a slurry cutoff wall: 1) conventional slot trench and 2) deep soil mixing. Either of these methods could be utilized to construct slurry cutoff walls in the program area.

Conventional Slot Trench

Construction equipment proposed for use under the slurry cutoff wall—conventional slot trench method include a long-reach trackhoe, three to four dump trucks, loaders, a rough terrain forklift, compactors, maintainers, a water truck, and two additional loaders at a to-be-determined staging/mixing area located adjacent to the landside of the levee. Dump trucks would haul material between the mixing area and the trench site. The three loudest pieces of equipment under this treatment option would be the compactor, dozer, and excavator. Table 3.7-15 summarizes noise levels projected from the simultaneous use of these pieces of equipment at various distances.

Table 3.7-15. Slurry Trench: Projected Construction Noise Levels due to a Compactor, Dozer, and Excavator in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	87	82
100	-6	-2	79	74
200	-12	-4	71	66
300	-16	-5	66	62
400	-18	-6	63	58
500	-20	-6	61	56
600	-22	-7	59	54
700	-23	-7	57	52
800	-24	-7	55	50
900	-25	-8	54	49
1000	-26	-8	53	48
1100	-27	-8	52	47
1200	-28	-9	51	46
1300	-28	-9	50	45
1400	-29	-9	49	44
1500	-30	-9	48	43
1600	-30	-9	47	42
1700	-31	-9	47	42
1800	-31	-10	46	41
1900	-32	-10	46	41
2000	-32	-10	45	40
3000	-36	-11	40	35

Calculations based on Federal Transit Administration 2006.

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Deep Soil Mixing

Construction equipment proposed for use under the slurry cutoff wall—deep soil mixing method would include two to four mixing augers supported by a crane, a batch plant, a scraper, and an excavator. A scraper and loader would also be used at a to-be-determined stockpile/staging area. Additionally, a haul truck would be required to haul spoils off site. The three loudest pieces of equipment under this treatment option would be the auger, scraper, and batch plant. Table 3.7-16 summarizes noise levels projected from the simultaneous use of four augers, a scraper, and an excavator at various distances.

Table 3.7-16. Deep Soil Mixing: Projected Construction Noise Levels due to Four Augers, a Scraper, and a Batch Plant in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	92	85
100	-6	-2	84	77
200	-12	-4	76	69
300	-16	-5	71	65
400	-18	-6	68	62
500	-20	-6	65	59
600	-22	-7	63	57
700	-23	-7	62	55
800	-24	-7	60	54
900	-25	-8	59	52
1000	-26	-8	58	51
1100	-27	-8	57	50
1200	-28	-9	56	49
1300	-28	-9	55	48
1400	-29	-9	54	47
1500	-30	-9	53	47
1600	-30	-9	52	46
1700	-31	-9	52	45
1800	-31	-10	51	44
1900	-32	-10	50	44
2000	-32	-10	50	43
3000	-36	-11	45	39

Calculations based on Federal Transit Administration 2006.

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Relief Wells

Construction equipment proposed for use under the relief walls treatment option would include a drill rig, an equipment support vehicle, an excavator or a backhoe, and a water supply truck. The three loudest pieces of equipment under this treatment option would be the excavator, drill rig, and water supply truck. Table 3.7-17 summarizes noise levels projected from the simultaneous use of these pieces of equipment at various distances.

In addition, the relief wells treatment option would involve the installation of a pump station. Inspection of the relief wells would be required at least on an annual basis, and observation of flow from the wells would be required during high river stages. The wells would be test-pumped every 2 years, and the discharge water from those tests would be trucked off site. Vehicular noise generated by the intermittent inspection and/or observation of the wells would be on a relatively limited basis.

Noise due to a pump station depends on several factors, including the number and type of pumps, the depth of the pumps, and the distance to the nearest noise-sensitive receptor. Pumps typically generate noise levels in the range of 68–80 dBA at a distance of 50 feet (Hoover & Keith 2008).

Table 3.7-17. Relief Wells: Projected Construction Noise Levels due to an Excavator, Drill Rig, and a Water Truck in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	84	81
100	-6	-2	76	73
200	-12	-4	68	65
300	-16	-5	64	60
400	-18	-6	61	57
500	-20	-6	58	54
600	-22	-7	56	52
700	-23	-7	54	51
800	-24	-7	53	49
900	-25	-8	51	48
1000	-26	-8	50	47
1100	-27	-8	49	46
1200	-28	-9	48	45
1300	-28	-9	47	44
1400	-29	-9	46	43
1500	-30	-9	46	42
1600	-30	-9	45	41
1700	-31	-9	44	41
1800	-31	-10	44	40
1900	-32	-10	43	39
2000	-32	-10	42	39
3000	-36	-11	38	34

Calculations based on Federal Transit Administration 2006.
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Closure Structure

Construction equipment proposed for use under the closure structure options includes scrapers, trench excavators, track hoes, cranes, sheepsfoot rollers, water trucks and small compactors. The three loudest pieces of equipment under this treatment option would likely be a scraper, excavator and compactor. Table 3.7-18 summarizes projected noise levels from these pieces of equipment at various distances.

Table 3.7-18. Closure Structure: Projected Construction Noise Levels due to a Scraper, Excavator and Compactor in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	88	83
100	-6	-2	80	75
200	-12	-4	72	67
300	-16	-5	67	62
400	-18	-6	64	59
500	-20	-6	61	57
600	-22	-7	59	55
700	-23	-7	58	53
800	-24	-7	56	51
900	-25	-8	55	50
1000	-26	-8	54	49
1100	-27	-8	52	48
1200	-28	-9	52	47
1300	-28	-9	51	46
1400	-29	-9	50	45
1500	-30	-9	49	44
1600	-30	-9	48	43
1700	-31	-9	48	43
1800	-31	-10	47	42
1900	-32	-10	46	41
2000	-32	-10	46	41
3000	-36	-11	41	36

Calculations based on Federal Transit Administration 2006.

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Jet Grouting

At the time of preparation of this document, an anticipated construction equipment list for jet grouting was not available. A reasonable assumption is that the noise levels from jet grouting would be comparable to the noise produced by the simultaneous operation of an air compressor and sand blasting equipment. Table 3.7-19 summarizes projected noise levels from these pieces of equipment at various distances.

Table 3.7-19. Jet Grouting: Projected Construction Noise Levels due to Jet Grouting in the Program Vicinity

Distance Between Source and Receiver (feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)
50	0	0	96	89
100	-6	-2	88	81
200	-12	-4	80	73
300	-16	-5	76	69
400	-18	-6	72	66
500	-20	-6	70	63
600	-22	-7	68	61
700	-23	-7	66	59
800	-24	-7	65	58
900	-25	-8	63	56
1000	-26	-8	62	55
1100	-27	-8	61	54
1200	-28	-9	60	53
1300	-28	-9	59	52
1400	-29	-9	58	51
1500	-30	-9	57	51
1600	-30	-9	57	50
1700	-31	-9	56	49
1800	-31	-10	55	48
1900	-32	-10	55	48
2000	-32	-10	54	47
3000	-36	-11	50	43

Calculations based on Federal Transit Administration 2006.

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Vegetation Removal

As is mentioned in Chapter 2, Alternatives, the vegetation removal alternative may involve hand-clearing activities using chainsaws (or trimmers) or mass clearing by bulldozers. Reference noise levels provided in Hoover & Keith (2008) indicate that a sound level of 66 dBA at 50 feet is a reasonable estimate for gasoline powered chainsaws. Table 3.7-10 indicates that bulldozers typically produce a noise level of 82 dBA at a distance of 50 feet. Where bulldozers and chainsaws are operated in the same vicinity, noise from the bulldozers would likely govern. Table 3.7-13 sound levels at various distances for a source level of 83 dBA at 50 feet. This is reasonably representative of noise from vegetation removal operations.

3.7.3.3.3 Flood and Recreation Program Alternatives

Effect NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise

As is mentioned above, all flood program alternatives and certain recreation program elements (such as trails, parks, kiosks, amphitheaters, boat launches, docks and piers construction) would require the use of heavy noise-generating construction equipment.

An analysis based on the noise levels summarized in Tables 3.7-11 to 3.7-19 of all reaches by potential flood program alternatives and recreation program elements indicates that temporary periods of construction activity along all nine of the proposed levee reaches have (under some limited circumstances) the potential to result in an excess of the established determinations of effects. In general, the construction activity would be far enough from sensitive receivers so the noise levels would not exceed significance thresholds.

However, in some cases the uncontrolled noise sources have the potential to exceed the West Sacramento daytime and nighttime noise ordinance limits, which are binding regulatory requirements. In those cases WSAFCA or its contractor will develop a noise control plan as outlined in the environmental commitment to employ noise-reducing construction practices to comply with applicable noise ordinances, as described in Section 2.9, Chapter 2, Alternatives. This environmental commitment may in some cases reduce this effect to less than significant but may not always reduce effect to this level. Therefore, this effect would be less than significant to potentially significant and unavoidable. The noise control plan will identify feasible measures that will be employed to reduce construction noise where necessary, and to temporarily re-locate residents if necessary. These measures may include but are not limited to those listed below:

- scheduling the loudest and most intrusive construction activities (such as impact pile driving) during daytime hours (7:00 a.m. to 7:00 p.m.) where feasible;
- requiring that construction equipment be equipped with factory-installed muffling devices or better, and that all equipment be operated and maintained in good working order to minimize noise generation;
- locating stationary noise-generating equipment as far as practical from noise-sensitive uses;
- limiting unnecessary engine idling (i.e., more than 5 minutes);
- employing equipment that is specifically designed for low noise emission levels;
- employing equipment that is powered by electric or natural gas engines as opposed to those powered by gasoline fuel or diesel;
- placing temporary barriers between noise sources and noise-sensitive receptors or taking advantage of existing barrier features (terrain, structures, edge of trench) to block noise transmission;
- prohibiting use of backup alarms and providing an alternate warning system, such as a flagman or radar-based alarm, that is compliant with state regulations;
- displaying signs with contractor contact telephone number in a conspicuous manner such as on construction site fences;
- locating construction staging areas as far as practical from noise-sensitive receptors; and

- designing truck haul routes along roads with as few noise-sensitive receptors as possible and along roads furthest from noise-sensitive receptors.
- If noise reduction measures adequate to achieve the numerical noise ordinance limits applicable at any given location are not feasible, then WSAFCA will obtain a temporary construction noise variance from the affected jurisdiction. WSAFCA will comply with all conditions (including public notification, supplemental noise control, compensation for temporary re-location of affected residents, and other specified measures) imposed by the variance process.

The proposed improvements also have the potential to cause noise impacts at homes adjacent to the haul routes used by heavy trucks to haul fill to the levee sites. It might be necessary to do construction activity at night, which would require haul trucks to travel for 24 hours per day. If nighttime hauling is required, then noise generated by the haul trucks might be significant and unavoidable at the nearest homes.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect NZ-1 Finding	With Mitigation
Less than significant –Significant and unavoidable	N/A

Effect NZ-2: Exposure of Sensitive Receptors to Temporary Vibration Caused by Pile Driving

The sheet pile alternative option is being considered for the Sacramento River North Levee, DWSC West Levee, DWSC East Levee and Yolo Bypass Levee reaches. Calculations based on guidance in Federal Transit Administration 2006 indicate pile driving could result in ppv vibration that exceeds 0.2 in/sec within about 100 feet of pile driving. Because of the potential for structures to be located within this distance for both the Sacramento River North Levee and DWSC East Levee reaches, this

effect is considered significant. Implementation of Mitigation Measure NZ-MM-1 would reduce this effect to less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative
Flood	▪ Sheet pile wall

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in the Sacramento River North Levee, DWSC West Levee, DWSC East Levee, and Yolo Bypass Levee reaches.

Effect NZ-2 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure NZ-MM-1: Limit Pile-Driving Vibration and Implement a Pile-Driving Vibration Control Plan

WSAFCA will employ vibration-reducing construction practices such that pile driving vibration does not exceed 0.2 inch per second at any adjacent structure. The program applicant will prepare a vibration control plan that will identify feasible measures that will be employed to reduce construction vibration where necessary. These measures may include but are not limited to:

- maximizing the distance between pile driving and structures;
- employing resilient pile caps to reduce vibration amplitude; and
- employing alternative driving methods such as vibratory driving to reduce vibration.
- If the above reduction measures are not feasible at any given location, then WSAFCA will inspect the structure before pile driving begins, conduct vibration monitoring during pile driving, and inspect the structure again after completion of pile driving. WSAFCA will promptly take corrective measures to repair identified damages caused by the pile driving.

Effect NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations

As is mentioned above, intermittent vehicular trips and light maintenance activities (such as under the flood wall, interior drain, sheet pile wall, slurry cutoff wall, and rock slope alternatives) by their very nature and frequency, are considered less than significant.

Intermittent maintenance activities under the stop log alternative would involve the use of a crane to install closures when necessary (such as a high-water event), as well as infrequent vehicular trips for inspection. Infrequent vehicular trips, due to their very nature, are not considered significant.

Based on the reference noise level for a typical crane of L_{max} 81 dBA at a distance of 50 feet, as given in Table 3.7-10, it is calculated that the 50 dBA significance threshold could be exceeded within 600 feet, and the 45 dBA threshold could be exceeded within 900 feet. Because residences are potentially located within this distance, this effect is considered significant. However, the circumstances (such as a high-water event) that would initiate such activity are anticipated to occur infrequently and without much notice. Therefore, certain measures included in the noise control plan environmental commitment discussed in Effect NZ-1 would likely not be feasible. Implementation of Mitigation Measure NZ-MM-2 would reduce this effect to a level of less than significant.

As is discussed above, intermittent noise due to vehicular trips servicing the proposed wells under the relief wells alternative would be relatively infrequent and would not be considered significant. Under the relief wells alternative (Sacramento River South Levee and DWSC East Levee reaches), a pump station would be constructed for permanent operation. With pumps typically generating a noise level in the range of 68 to 80 dBA at a distance of 50 feet (Hoover & Keith 2008), this indicates that noise levels due to a pump station housing one pump could potentially exceed the daytime 50 dBA significance threshold within 700 feet and the 45 dBA nighttime threshold within 1,100 feet. Because residences could be located within this distance, this effect is considered significant. Implementation of Mitigation Measure NZ-MM-3 would reduce this effect to a level of less than significant.

Under the levee raise (in place, adjacent and full), setback levee, stability berm, seepage berm, slope flattening and certain recreation elements (such as trails), maintenance operations may involve the reconditioning of slopes employing the use of dozers and/or the reconditioning of patrol roads employing the use of graders and compactors. Additionally, vegetation removal operations and maintenance may involve the use of hand-powered chainsaws and/or mass grading employing the use if dozers. While these maintenance activities would be relatively infrequent, they would have the potential to exceed the established determinations of effects depending on the distance to the nearest noise-sensitive receptor and the time of day at which said activities were conducted. However, the environmental commitment of implementing a noise control plan outlining noise reduction and maintenance practices to comply with applicable local noise ordinances (as described in Section 2.9 of Chapter 2, Alternatives) would make this effect less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect NZ-3 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure NZ-MM-2: Employ Noise-Reducing Emergency Operational Practices to Comply with Applicable Local Noise Ordinances Where Feasible

The overseer or contractor in charge of emergency preparedness under the stop- log alternative will prepare a noise control plan identifying feasible measures that will be employed to reduce construction noise where necessary. These measures may include but are not limited to those listed below:

- requiring that construction equipment be equipped with factory-installed muffling devices or better, and that all equipment be operated and maintained in good working order to minimize noise generation;
- employing equipment that is specifically designed for low noise emission levels; and
- employing equipment that is powered by electric or natural gas engines as opposed to those powered by gasoline fuel or diesel.

Mitigation Measure NZ-MM-3: Design Acoustical Treatments into the Proposed Pump Station to Comply with Applicable Local Noise Standards

WSAFCA will design pump stations such that noise does not exceed applicable local noise ordinance standards. Where there is no applicable standard, pump stations will be designed to limit noise to 45 dBA at the nearest residence. Measures that can be incorporated into the station design include but are not limited to:

- maximizing the distance between the pump station and the nearest residence; and
- enclosing the pumps in an enclosed building structure.

Effect NZ-4: Compatibility of Recreation Elements with Surrounding Land Uses

The development of multiple areas of recreation, such as trails, park, kiosks and amphitheatres, is proposed as part of the program. Loud voices and/or amplified public address systems would have the potential to exceed established local noise level standards established for noise sources affecting existing or planned noise-sensitive uses. In addition, park areas where people would congregate and children would potentially play could be located in areas in excess of noise levels established as acceptable by applicable local general plan noise elements. Therefore, this effect is considered significant. However, at the time of preparation of this document, not enough information is available about the location of the specific recreation elements to incorporate adequate mitigation measures. Therefore, this potential significant effect would be addressed at the project-specific level for each of the proposed levee reaches and their respective recreation elements.

Additionally, certain special projects (such as venues for cultural, recreational, educational and/or entertainment activities) are also proposed to be incorporated into the program. At the time of the preparation of this document, project specifics are not available and an analysis of effects would be speculative. These projects would be evaluated individually, each likely necessitating independent environmental documentation and review.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different recreation program alternatives are proposed for the reaches, this effect could occur in all nine program reaches.

Effect NZ-4 Finding	With Mitigation
Significant	Determined on a project basis

Effect NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration

The operation of heavy equipment may generate groundborne vibration that could be perceptible at residences or other sensitive land uses close to construction activity. Based on vibration reference levels from Federal Transit Administration (2006), vibration from construction activity would attenuate to less than 0.1 in/sec ppv within about 50 feet under typical conditions. Because sensitive receptors in areas of West Sacramento may be located within this distance, this effect is considered to be potentially significant. Implementation of Mitigation Measure NZ-MM-4 may reduce this effect, but not always to a less-than-significant level.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect could occur in all nine program reaches.

Effect NZ-5 Finding	With Mitigation
Significant	Less than significant – Significant and unavoidable

Mitigation

Mitigation Measure NZ-MM-4: Employ Measures to Prevent Excessive Exposure of Buildings and Structures to Groundborne Vibration

WSAFCA or its contractor will, to the extent feasible, maintain a minimum distance of 50 feet between construction equipment and occupied or vibration-sensitive buildings or structures. For cases where this is not feasible, the resident or property owner will be notified in writing prior to construction activity, and where necessary, relocated to temporary housing for the duration of construction activity. WSAFCA will inspect the interior walls of those homes prior to construction to inventory existing cracks in paint and plaster and will retain a qualified acoustical consultant or engineering firm to conduct vibration monitoring at that building to measure the actual vibration levels during construction. Following completion of construction, WSAFCA will conduct a second inspection to inventory new damage to paint and plaster, if any, that occurred as a result of construction-induced vibration. If new damage is found, then WSAFCA will promptly arrange to have the damaged repaired, or will reimburse the property owner for appropriate repairs.

In addition, if construction activity is required within 100 feet of residences or other vibration-sensitive buildings, a designated complaint coordinator will be responsible for handling and responding to any complaints received during such periods of construction. A reporting program will be required that documents complaints received, actions taken, and the effectiveness of these actions in resolving disputes.

Section 3.8
Vegetation and Wetlands

3.8.1 Introduction

This section describes the regulatory and environmental setting for vegetation and wetlands, effects on vegetation and wetlands that would result from the program, and mitigation measures that would reduce significant effects.

The key sources of data and information used in the preparation of this section are listed below.

- California Natural Diversity Database (CNDDB) records search of the USGS 7.5-minute Grays Bend, Taylor Monument, Rio Linda, Davis, Sacramento West, Sacramento East, Dixon, Saxon, Clarksburg, Florin, Dozier, Liberty Island, Courtland, Birds Landing, Rio Vista, and Isleton quadrangles (California Natural Diversity Database 2009)
- USFWS list of endangered, threatened, and proposed for listing species for the USGS 7.5-minute Sacramento West, Clarksburg, Saxon, Liberty Island, and Rio Vista quadrangles and Yolo and Solano Counties obtained from the USFWS website (U.S. Fish and Wildlife Service 2009)
- California Native Plant Society's (CNPS's) 2009 online Inventory of Rare and Endangered Plants (California Native Plant Society 2009a)
- Vegetation data from the Yolo Natural Heritage Program (Yolo Natural Heritage Program 2009)
- Aerial photographs of the program study area
- *Yolo County General Plan* (Yolo County 2002)
- *City of West Sacramento General Plan Policy Document* (City of West Sacramento 2004)
- *Yolo County Oak Woodland Conservation and Enhancement Plan* (Yolo County 2007)

An ICF International biologist conducted prefield and reconnaissance-level field surveys in the study area, as further described in the Environmental Consequences section below. This information was used to develop lists of special-status plant species and sensitive natural communities that could be present in the study area. Special-status species with potential to occur in the study area are discussed in the Environmental Setting section below.

3.8.2 Affected Environment

3.8.2.1 Regulatory Setting

3.8.2.1.1 Federal

Endangered Species Act

USFWS and NMFS are responsible for implementation of the Federal ESA (16 USC 1531 *et seq*.). The ESA protects fish and wildlife species that are listed as threatened or endangered, as well as their

habitats. *Endangered* species, subspecies, or distinct population segments are in danger of extinction through all or a significant portion of their range. *Threatened* species, subspecies, or distinct population segments are likely to become endangered in the near future.

ESA Section 7 mandates that all Federal agencies consult with USFWS and NMFS if the agencies determine that a proposed project may affect a listed species or its habitat. The purpose of consultation with USFWS and NMFS is to ensure that the Federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or significantly modify any critical habitat for listed species.

For plants listed as endangered under the ESA, Section 9(a)(2) of the act prohibits their import or export from the United States. Section 9(a)(2) also prohibits acts to remove, cut, dig up, damage, or destroy endangered plant species in non-Federal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

Clean Water Act

The Federal CWA is administered by the EPA and USACE. USACE is responsible for regulating the discharge of fill material into waters of the United States (including lakes, rivers, streams, and their tributaries) and wetlands. Wetlands are defined for regulatory purposes as areas that are "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions"(Environmental Laboratory 1987: 13).

The discharge of dredged or fill material into waters of the United States is subject to permitting under CWA Section 404. Certification from the applicable RWQCB is also required when a proposed activity may result in discharge into navigable waters, pursuant to CWA Section 401 and EPA's Section 404(b)(1) guidelines.

USACE and EPA recently developed a memorandum titled Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos* v. *United States & Carabell* v. *United States* that states that the agencies will assert jurisdiction over the following categories of water bodies: traditional navigable waters (TNWs), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are relatively permanent, and wetlands that abut such tributaries.

Additionally, the Sacramento District of USACE recently issued a public notice (SPK-2008-01557) regarding local processing procedures for jurisdictional determinations. Applicants seeking USACE permits can elect either the traditional "approved" approach to obtain a jurisdictional determination from USACE or seek a preliminary jurisdictional determination that concedes jurisdiction to USACE. The preliminary jurisdictional determination is intended to streamline the process for applicants who want to obtain USACE permit authorizations or jurisdictional determinations.

Rivers and Harbors Act

Rivers and Harbors Act Section 10 requires authorization from USACE for the construction of any structure in or over any navigable waters of the United States. Tidal waterways within the Delta are considered navigable waters. The law applies to any dredging, excavation, filling, or other modification of a navigable water of the United States, as well as to all structures, including bank protection (e.g., riprap) and mooring structures, such as those in a marina. Structures or work

outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work would affect the course, location, or condition of the water body.

Executive Order 11990: Protection of Wetlands

Executive Order 11990, signed May 24, 1977, directs all Federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that Federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. A project that encroaches on wetlands may not be undertaken unless the agency has determined that 1) there are no practicable alternatives to such construction, 2) the project includes all practicable measures to minimize harm to wetlands that would be affected by the project, and 3) the effect would be minor.

Executive Order 13112: Invasive Species

Executive Order 13112, signed February 3, 1999, directs all Federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The order established the National Invasive Species Council, which is composed of Federal agencies and departments, and the supporting Invasive Species Advisory Committee, which is composed of state, local, and private entities. The council's national invasive species management plan recommends objectives and measures to implement Executive Order 13112 and to prevent the introduction and spread of invasive species (National Invasive Species Council 2008). Executive Order 13112 requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential effects, and measures to prevent or eradicate them.

3.8.2.1.2 State

The state laws that regulate the treatment of vegetation and wetlands in the program area are outlined below

California Endangered Species Act

The California Endangered Species Act (CESA) was enacted in 1984. The act prohibits the take of endangered, threatened, and candidate species and defines it as an activity that would directly or indirectly kill an individual of a species; habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. DFG administers the act and authorizes take through Section 2081 agreements (except for species designated as fully protected). DFG can adopt a Federal biological opinion as a state biological opinion under California Fish and Game Code, Section 2095. In addition, DFG can write a consistency determination for species that are both federally and state-listed if DFG determines that the avoidance, minimization, and compensation measures will ensure no take of species. In the case of rare plant species, CESA defers to the California Native Plant Protection Act of 1977 (CNPPA; discussed below).

California Native Plant Protection Act

The CNPPA prohibits importation of rare and endangered plants into California, and take or sale of rare and endangered plants. CESA defers to CNPPA, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under CNPPA are not protected under CESA, but rather under CEQA.

California Fish and Game Code

DFG provides protection from take for a variety of species under the California Fish and Game Code. DFG also protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Fish and Game Code 1601–1606. The code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying DFG, incorporating necessary mitigation, and obtaining a streambed alteration agreement. DFG's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover. Riparian trees that have a diameter of 6 inches or greater also fall within DFG's jurisdiction.

Porter-Cologne Water Quality Control Act

Section 13260 of the California Water Code requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the *waters of the state* to file a report of discharge (an application for waste discharge requirements)." Under the Porter-Cologne Water Quality Control Act definition, the term *waters of the state* is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—in California, waters of the United States represent a subset of waters of the state. Therefore, the State of California retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404.

If USACE determines a wetland is not subject to regulation under CWA Section 404, water quality certification under CWA Section 401 is not required. However, the RWQCB may impose waste discharge requirements (WDRs) if fill material would be placed into waters of the state.

3.8.2.1.3 Local

Yolo County

Yolo County General Plan

Table 3.8-1 summarizes the *Yolo County General Plan* policies (Yolo County 2002) related to vegetation and wetlands in the program area.

Yolo County Oak Woodland Conservation and Enhancement Plan

The *Yolo County Oak Woodland Conservation and Enhancement Plan* (Yolo County 2007) promotes voluntary efforts to conserve and enhance the county's existing oak woodlands to help minimize the effects of land conversion and other factors that disturb the health and longevity of existing oak woodlands.

Table 3.8-1. Summary of Yolo County General Plan Policies Related to Vegetation and Wetlands in the Program Area

Policy Number	Policy Description
OP-4	The County shall encourage and support coordinated efforts by State and federal agencies, cities, special districts, and non-profit and conservation organizations to protect lands containing open space resources.
OP-5	The County shall utilize the CEQA process to identify significant impacts on open space and shall require new development to implement county-approved mitigation measures that minimize such impacts.
OP-6	The County shall utilize the following objective criteria when considering conversion of open space lands to other uses: • The use is directly related and essential to an otherwise approved open space, agricultural or recreational activity; • Lack of suitable locations in Yolo County prevent the use from locating within an area not designated for open space uses; • The site is not located in a conservation easement, contracted agricultural preserve, Farmland Security Zone, flood control bypass or channel, or earthquake fault zone; • The use will not diminish or prevent open space, recreational or agricultural use on adjoining lands; • The use can be developed without impairing the open space experience, managed resource production and other open space uses and activities in the vicinity; and • The use does not conflict with any adopted local, State or federal plans for protection of open space resources.
OP-7	Development shall be directed away from naturally occurring riparian areas and wetlands.
OP-8	Open space buffer areas shall be utilized to separate incompatible uses from areas of unique biological or agricultural importance.
OP-18	The County, in conjunction with the cities in Yolo County, shall endeavor to adopt a Natural Communities Conservation Plan that protects wildlife resources, open space and agricultural production.

Source: Yolo County 2002.

City of West Sacramento

City of West Sacramento General Plan

Table 3.8-2 summarizes the *City of West Sacramento General Plan* policies (Part II, Section 6) (City of West Sacramento 2004) that are applicable to vegetation and wetlands in the program area.

Table 3.8-2. Summary of City of West Sacramento General Plan Policies Related to Vegetation and Wetland Resources in the Program Area

Section-Goal-Policy Number	Policy Description
VI-C-1	The City shall encourage and support development projects and programs that enhance public appreciation and awareness of the natural environment.
VI-C-2	The City shall support state and federal policies for preservation and enhancement of riparian and wetland habitats by incorporating, as deemed appropriate, the findings and recommendations of the *Sacramento Greenway Plan*, California Department of Fish and Game and the U.S. Fish and Wildlife Service into site-specific development proposals.
VI-C-3	The City shall require site-specific surveys to identify significant wildlife habitat and vegetation resources for development projects located in or near riparian or wetland areas.
VI-C-4	The City shall support mitigation measures which provide for no net loss of riparian or wetland habitat acreage and value by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall seek replacement on at least a 1:1 basis. Replacement entails creating habitat that is similar in extent and ecological value to that displaced by the project. The replacement habitat should consist of locally occurring, native species and shall be located as close as possible to the project site or be part of a larger replacement habitat project.
VI-C-5	To minimize disturbance to wildlife, the City shall require the provision and maintenance of an adequate setback between significant wetland habitat and adjacent development. The buffer shall be landscaped with native or compatible introduced ornamental vegetation and may be used for passive recreation purposes.
VI-C-6	The City shall encourage the maintenance of marsh and riparian vegetation along irrigation/drainage canals and along the Deep Water Ship Channel by encouraging that routine maintenance and clearing disturb only one bank per year and maintain the fringes of marsh vegetation.
VI-C-7	The City shall seek to minimize the loss or degradation of wetland and riparian habitats at the following sites: Lake Washington and associated wetlands; Bee Lakes and associated riparian woodlands; riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal; and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.
VI-C-9	The City shall seek to preserve populations of rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects.
VI-C-10	The City shall not approve projects that would affect endangered wildlife or plant species.
VI-C-11	The City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.
VI-C-12	Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.
VI-C-13	The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties. In particular, native plants should be used along the Sacramento River and in areas adjacent to riparian and wetland habitats.

Source: City of West Sacramento 2004.

Tree Preservation Ordinance

The City's Tree Preservation Ordinance is found in the West Sacramento Municipal Code, Title 8 (Health and Safety), Chapter 24 (Tree Preservation). The City has definitions for heritage and landmark trees. Trees that may be considered landmark or heritage trees occur in the program area.

A *heritage tree* is defined as any living tree with a trunk circumference of 75 inches (diameter of 24 inches) or more, or any living native oak (any species of the genus *Quercus*) with a trunk circumference of 50 inches (diameter of 16 inches) or more, both measured 4.5 feet above ground level. The circumference of multi-trunk trees is based on the sum of the circumference of each trunk. A *landmark tree* is defined as a tree or stand of trees that is especially prominent, stately, or of historical significance as designated by the City Council. Trees that are too small in diameter to meet the size threshold of either a heritage or landmark tree but are located within the public right-of-way (typically 12.5 feet from the curb) are also protected by the ordinance.

It is unlawful in West Sacramento to perform any of the following acts with respect to a heritage or landmark tree without a tree permit issued by the City's tree administrator:

- Move, remove, cut down, poison, set fire to or permit fire to burn in proximity to, or perform or fail to perform any act that results in the unnatural death or destruction of a landmark or heritage tree.
- Perform any activity that will interfere with or retard the natural growth of any landmark or heritage tree.
- Perform any work or permit any work to be performed within the dripline area of a landmark or heritage tree.
- Trim or prune any branch of a landmark or heritage tree that is 5 inches or more in diameter.
- Change the appropriate amount of irrigation or drainage water provided to any landmark, heritage, or street tree. Trench, grade, pave, or otherwise damage or disturb any exposed roots within 1 foot outside the dripline area of any landmark, heritage, or street tree.
- Park or operate any motor vehicle within 1 foot outside the dripline area of any landmark, heritage, or street tree.
- Place or store any equipment or construction materials within 1 foot outside the dripline area of any landmark, heritage, or street tree.
- Place, apply, or attach any signs, ropes, cables, or other items to any landmark, heritage, or street tree.
- Place or allow to flow any oil, fuel, concrete mix, or other deleterious substance into or over within 1 foot outside the dripline area of any landmark, heritage, or street tree.

Tree permits require the applicant to replace a tree that must be removed with a living tree on the property or within West Sacramento in a location approved by the tree administrator. The applicant must also replace the replacement tree if it dies any time within 3 years of the initial planting. Replacement is not required if a tree is removed because it poses a risk or hosts a plant parasite.

Replacement trees are required at a ratio of 1:1 (i.e., 1-inch diameter of replacement plant for every 1-inch diameter of tree removed). Replacement trees may be a combination of 15-gallon trees, which are the equivalent of a 1-inch-diameter tree, or 24-inch box trees, which are the equivalent of

a 3-inch-diameter tree. If trees cannot be replaced on site, the applicant must pay an in-lieu fee, which will be used to purchase and plant trees elsewhere in West Sacramento.

Solano County

The general plan was adopted by the Board of Supervisors on August 5, 2008. The general plan contains a resources element that strives to ensure conservation, preservation, and enhancement of natural, cultural, and open space resources to ensure a high quality of life for current and future county residents. The resources chapter of the general plan identifies the following goals, policies, and implementation measures associated with natural (biological) resources that will be used by Solano County in day-to-day decision making to protect these resources.

General Resource Goals

The goals and accompanying policies describe outcomes consistent with the following strategic directions of the general plan:

- preserving of the county's valued natural, cultural, and scenic resources;
- enhancing and restoring the natural environment and the county's diverse landscapes; and
- ensuring sustainable provision of energy, water, and mineral resources.

General Resource Policies

- **RS.G-1:** Manage and preserve the diverse land, water, and air resources of the county for the use and enrichment of the lives of present and future generations.
- **RS.G-2:** Ensure continued presence and viability of the county's various natural resources.
- **RS.G-3:** Repair environmental degradation that has occurred, and seek an optimum balance between the economic and social benefits of the county's natural resources.
- **RS.G-4:** Preserve, conserve, and enhance valuable open space lands that provide wildlife habitat; conserve natural and visual resources; convey cultural identity; and improve public safety.
- **RS.G-5:** Ensure availability of affordable energy supplies and require efficiency and conservation measures to minimize energy consumption.
- **RS.G-6:** Preserve the visual character and identity of communities by maintaining open space areas between them.
- **RS.G-7:** Ensure provision of an adequate, competitively priced and sustainable water supply and associated infrastructure to serve the needs of existing and future water users.
- **RS.G-8:** Achieve ongoing coordination between land use and water supply planning.
- **RS.G-9:** Protect, monitor, restore and enhance the quality of surface and groundwater resources to meet the needs of all beneficial uses.
- **RS.G-10:** Foster sound management of the land and water resources in Solano County's watersheds to minimize erosion and protect water quality using best management practices and protect downstream waterways and wetlands.

Biological Resource Policies

- **RS.P-1:** Protect and enhance the county's natural habitats and diverse plant and animal communities, particularly occurrences of special-status species, wetlands, sensitive natural communities, and habitat connections.
- **RS.P-2:** Manage the habitat found in natural areas and ensure its ecological health and ability to sustain diverse flora and fauna.
- **RS.P-3:** Focus conservation and protection efforts on high –priority habitat areas.
- **RS.P-4:** Together with property owners and Federal and state agencies, identify feasible and economically viable methods of protecting and enhancing natural habitats and biological resources.
- **RS.P-5:** Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations. Preserve contiguous habitat areas to increase habitat value and to lower land management costs.
- **RS.P-6:** Protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way.

3.8.2.2 Environmental Setting

This section defines the study area evaluated for vegetation and wetland resources, identifies waters of the United States (including wetlands) preliminarily mapped in the study area, and describes existing land cover types in the study area. Land cover types are shown in Figure 3.8-1, and wetlands and waters of the United States are outlined in Figure 3.8-2. This section also discusses special-status plant species that are known to occur in the program region, invasive plant species, and protected tree resources.

3.8.2.2.1 Study Area

The program area is located along the reaches of the following levees:

- Sacramento River North Levee
- Sacramento River South Levee
- Port North Levee
- Port South Levee
- South Cross Levee
- DWSC West Levee
- DWSC East Levee
- Yolo Bypass Levee
- Sacramento Bypass Levee

For the purposes of this program-level analysis, the study area consists of program area plus an approximate 500-foot-wide buffer area on the landside of each of the levee reaches. The study area is located within the Great Central Valley subdivision of the California Floristic Province in Yolo

County (Hickman 1993: 44, 45) and the elevation in the study area ranges from about 10 to 35 feet above mean sea level.

3.8.2.2.2 Prefield Investigation

Prior to the reconnaissance-level field visits, the botanist/wetland ecologist reviewed the following sources of information pertaining to vegetation and wetland resources in the study area:

- a CNDDB records search of the USGS 7.5-minute Sacramento West, Sacramento East, Grays Bend, Taylor Monument, Rio Linda, Davis, Clarksburg, Saxon, and Florin quadrangles (California Natural Diversity Database 2007);
- the USFWS list of endangered, threatened, and species proposed for listing for the USGS 7.5-minute Sacramento West quadrangle and Yolo County obtained from the USFWS website (U.S. Fish and Wildlife Service 2007);
- the CNPS's 2007 online Inventory of Rare and Endangered Plants (California Native Plant Society 2007); and
- aerial photographs of the program study area.

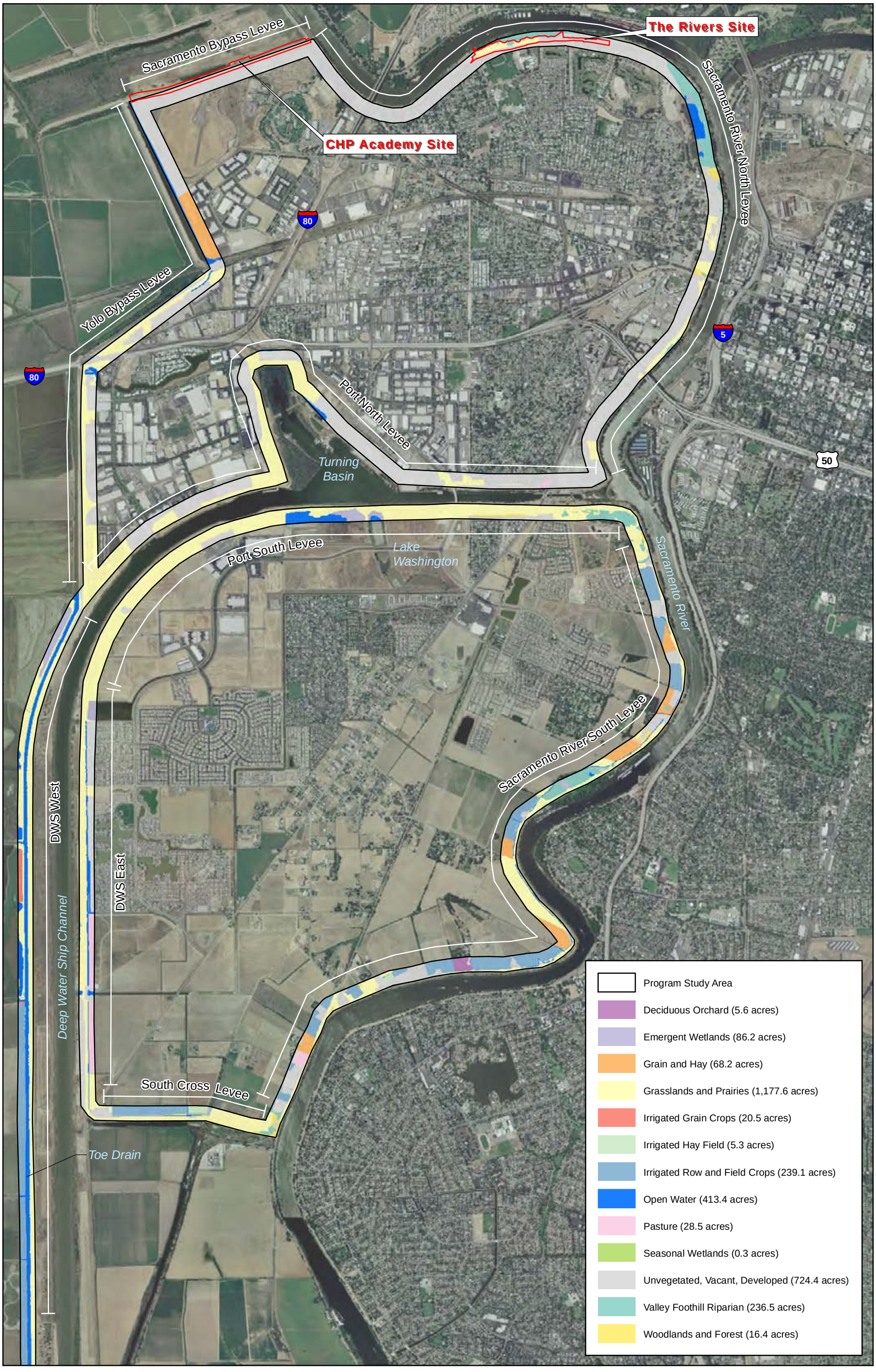
3.8.2.2.3 Field Surveys

The evaluation of potential program effects on vegetation and wetlands is based on the results of field surveys and a review of existing documentation. An ICF International botanist/wetland ecologist conducted reconnaissance-level field visits to various portions of the study area on June 21, September 19, October 5, and November 29, 2007; December 18 and 19, 2008; and January 9, 2009. In general, the field visits were conducted to:

- identify land cover types and verify existing vegetation data,
- evaluate whether potential habitat may be present for special-status plant species that have been identified in the vicinity of the study area, and
- identify potential waters of the United States (including wetlands).

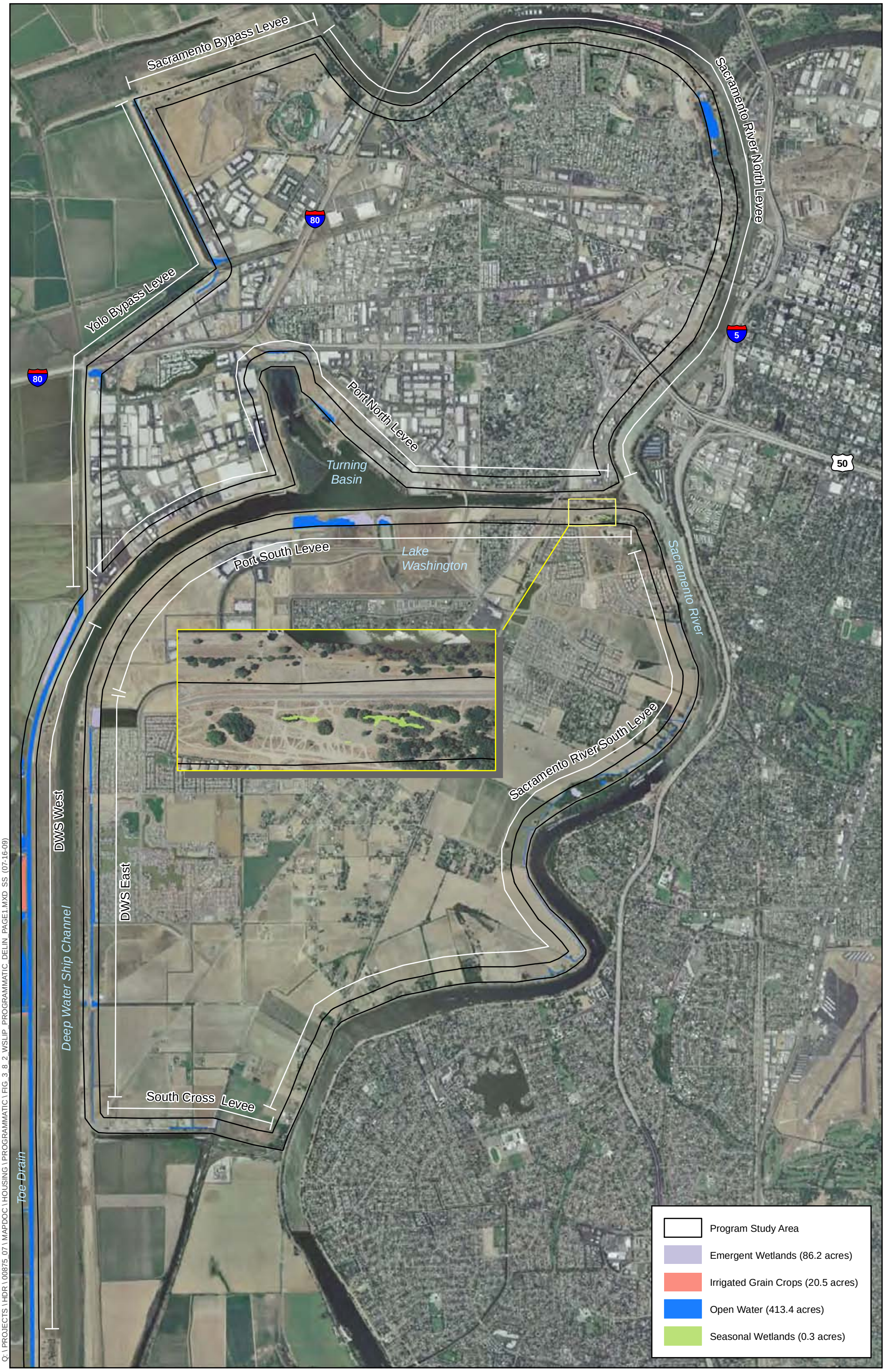
3.8.2.2.4 Waters of the United States, Including Wetlands

The study area contains numerous features that are or have the potential to be waters of the United States, including wetlands. For the purposes of this program analysis, the approximate locations and acreages of wetlands and other waters in the study area were identified using a combination of vegetation data from the Yolo Natural Heritage Program, aerial photograph interpretation, and field observations. The land cover types that represent wetlands and other waters in the study area are shown in Figure 3.8-2 and include emergent wetlands (approximately 86 acres), irrigated grain crops (approximately 20 acres), open water (approximately 413 acres), and seasonal wetlands (0.3 acre). The study area may contain additional wetlands and other waters that would be identified as part of project-level analyses. The Sacramento River, DWSC, and Turning Basin are TNWs, and therefore subject to regulations by USACE and EPA under the CWA. The marshes and areas of open water in the study area that are located adjacent to these TNWs are also considered jurisdictional. The drainages located at the toe of the levee (i.e., toe drains) and adjacent to agricultural fields are potentially jurisdictional areas.



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Figure 3.8-1
Land Cover Types in the Program Study Area



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Figure 3.8-2
Preliminary Mapping of Potential Waters of the United States, Including Wetlands, in the Program Study Area



Figure 3.8-2
Preliminary Mapping of Potential Waters of the United States, Including Wetlands, in the Program Study Area



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Figure 3.8-2
Preliminary Mapping of Potential Waters of the United States, Including Wetlands, in the Program Study Area

3.8.2.2.5 Land Cover Types

Vegetation information for most of the study area was obtained from the Yolo Natural Heritage Program's Vegetation Map Series (Yolo Natural Heritage Program 2009). The land cover types discussed below are based on categories established by the Yolo Natural Heritage Program. The vegetation information obtained was field-verified at accessible areas within the study area. A combination of aerial photograph interpretation and field observation was used to identify land cover types in the remainder of the study area.

Based on this information, it was determined that numerous land cover types occur in the study area. Five are considered natural communities: valley foothill riparian habitat, grasslands and prairies, emergent wetlands, woodlands and forest, and open water. The others are associated with human activities: pasture, grain and hay fields; deciduous orchards; irrigated hay fields; irrigated row and field crops; and unvegetated, vacant, or developed areas. A list of all plant species observed during reconnaissance-level field visits to the study area is provided in Appendix F. Each land cover type is discussed below and shown in Figure 3.8-1.

Natural Communities

Valley Foothill Riparian Habitat

Most valley foothill riparian habitat in the study area (hereafter referred to as "riparian habitat") occurs along the Sacramento River North and Sacramento River South Levees, but smaller riparian areas are found at all of the levees in the study area (Figure 3.8-1).The total area encompassed by valley foothill riparian habitat in the study area is approximately 239 acres. The overstory of the riparian habitat consists of mature, well-established trees: Fremont cottonwood (*Populus fremontii* ssp*. fremontii*), valley oak (*Quercus lobata*), black willow (*Salix gooddingii*), and box elder (*Acer negundo* var. *californicum*). During the reconnaissance-level field visits, Oregon ash (*Fraxinus latifolia*), western sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*) were also observed. The shrub layer consists of smaller trees and shrubs; representative species observed were poison oak (*Toxicodendron diversilobum*), sandbar willow (*Salix exigua*), and Himalayan blackberry (*Rubus discolor*). The riparian habitat in the study area also contains trees that may be considered heritage or landmark trees as defined by the City. Elderberry shrubs (*Sambucus mexicana*), the host plant of the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), which is federally listed as threatened, were observed in the riparian habitat. Riparian habitat is listed as a sensitive natural community by the CNDDB (2009).

Grasslands and Prairies

Grasslands and prairies consisting of non-native annual grassland cover approximately half of the study area and encompass a total of approximately 1,178 acres (Figure 3.8-1). The largest non-native annual grassland area occurs near the DWSC East, Port South, and DWSC West Levees, but grasslands are scattered throughout the study area. The non-native annual grassland is dominated by naturalized annual grasses with intermixed perennial and annual forbs. Grasses commonly observed in the study area are foxtail barley (*Hordeum murinum* ssp. *leporinum*), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*), and soft chess (*Bromus hordeaceus*). Other grasses observed were wild oats (*Avena* spp.), Bermuda grass (*Cynodon dactylon*), and rattail fescue (*Vulpia myuros* var. *myuros*). Forbs commonly observed in annual grasslands in the study area are yellow star-thistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Picris*

echioides), and sweet fennel (*Foeniculum vulgare*). Other forbs observed are perennial peppergrass (*Lepidium latifolium*), Italian thistle (*Carduus pycnocephalus*), horseweed (*Conyza canadensis*), black mustard (*Brassica nigra*), and fireweed (*Epilobium brachycarpum*). The annual grasslands in the study area contain a relatively large proportion of ruderal species, likely because of substantial disturbance from human activities.

Emergent Wetlands

There are approximately 86 acres of emergent wetlands within the study area. The largest areas of emergent wetlands (hereafter referred to as "marshes") occur in the vicinity of the Turning Basin along the Port North and Port South Levees (Figures 3.8-1 and 3.8-2). Marshes were also observed in the study area near the South Cross, Yolo Bypass, and DWSC West Levees. Smaller patches of freshwater marsh that are not shown at the mapping scale used by the Yolo Natural Heritage Program also have the potential to occur along the remaining levees (Yolo Natural Heritage Program 2009). Representative species observed in marshes in the study area were tules (*Scirpus* sp.), cattails (*Typha* sp.), and rushes (*Juncus* sp.). Marshes in the study area represent potentially jurisdictional waters of the United States (including wetlands) that may be subject to regulation by USACE under CWA Section 404. Marsh habitat (i.e., coastal and valley freshwater marsh) is also recognized as a sensitive natural community by the CNDDB (2009).

Seasonal Wetlands

Four small seasonal wetlands occur in the study area at the eastern end of the Port South Levee (Figures 3.8-1 and 3.8-2), totaling approximately 0.3 acre. These wetlands appear to be inundated during wetter times of the year and ongoing and past disturbance contributed to the formation of three of the four seasonal wetlands that appear to have originated from tire tracks within the network of dirt trails in the basin south of South River Road. Representative plant species observed in the seasonal wetlands were hyssop loosestrife (*Lythrum hyssopifolium*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian ryegrass (*Lolium multiflorum*), and fiddle dock (*Rumex crispus*).

Woodlands and Forest

Small patches of woodland occur in the study area along the Sacramento River North and Sacramento River South Levees, and at the junction of the Sacramento River South and South Cross Levees (Figure 3.8-1). Woodland and forest encompass approximately 16 acres. These patches of woodland are distinguished from the valley foothill riparian habitat by a predominance of valley oaks. The woodlands in the study area have a relatively open canopy. The woodlands in the study area contain trees that have the potential to be considered heritage or landmark trees under the City's Tree Preservation Ordinance.

Open Water

There are approximately 413 acres of open water within the study area. The largest areas are the Sacramento River, DWSC, Turning Basin, and Toe Drain (Figures 3.8-1 and 3.8-2). These areas are TNWs that would be considered jurisdictional by USACE under CWA Section 404. Smaller areas of open water occur in the study area near the Sacramento River North, DWSC East, Yolo Bypass, Port North, and Port South Levees. These smaller areas may or may not fall under USACE jurisdiction under CWA Section 404. Open water areas are essentially unvegetated.

Other Land Cover Types

The following land cover types are associated with human activities.

Pasture

Approximately 28 acres of pasture occur in small patches within the study area near the Sacramento River South and Port North Levees and provide grazing areas for cattle and horses (Figure 3.8-1). Species commonly found in pastures in the region are dallisgrass (*Paspalum dilatatum*), soft chess, and annual bluegrass (*Poa annua*).

Grain and Hay Fields

Small fields used to produce grain and hay are located in the study area near the Sacramento River South Levee and encompass approximately 68 acres (Figure 3.8-1). Although the specific crops were not discernible during the site visits, they were likely barley, oats, or alfalfa, which are commonly grown in the region.

Deciduous Orchards

Deciduous orchards in the study area are confined to a small area near the Sacramento River South Levee that encompasses approximately 6 acres (Figure 3.8-1). At the time of the site visits, the area appeared to be unmaintained (i.e., inactive). Although the specific type of orchard crop could not be discerned, it was likely one of the orchard types commonly known from the region: almonds, walnuts, pears, peaches, or plums.

Irrigated Grain Crops

Approximately 20 acres of irrigated grain crops occur within the study area. These areas are associated with the DWSC West Levee reach and appear to consist entirely of rice fields (Figures 3.8-1 and 3.8-2).

Irrigated Hay Fields

Two small irrigated hay fields occur in the study area near the South Cross Levee and in the southern portion of the Sacramento River South Levee (Figure 3.8-1). Irrigated hay fields encompass approximately 5 acres in study area. These fields are bounded on at least one side by an agricultural toe drain, which presumably carries water for irrigation of the fields. Although the specific crops were not discernible at the time of the site visits, the fields were likely barley, oats, or alfalfa, which are commonly grown in the region.

Irrigated Row and Field Crops

Irrigated row and field crops occur in the study area along the Yolo Bypass, Sacramento River South, and South Cross Levees and encompass approximately 239 acres (Figure 3.8-1). Most of the irrigated row and field crops along the Yolo Bypass Levee appear to be rice fields. At the time of the site visits, the specific crops grown in the remainder of the irrigated row and field crop areas could not be discerned, but they were most likely crops common to the region, such as tomatoes, safflower, sunflowers, melons, or strawberries.

Unvegetated, Vacant, or Developed Areas

Most of the approximately 724 acres that comprise the unvegetated, vacant, and developed areas in the study area occur north of the DWSC along the Sacramento River North, Yolo Bypass, Sacramento Bypass, and Port North Levees (Figure 3.8-1). Vacant areas within the study area commonly contain ruderal species that have the ability to colonize disturbed areas: bristly ox-tongue, yellow star-thistle, common mallow (*Malva neglecta*), milk-thistle (*Silybum marianum*), prickly lettuce, chicory (*Cichorium intybus*), and perennial peppergrass**.** Vegetation in developed portions of the study area consists of ornamental species used for landscaping: English ivy (*Hedera helix*), crapemyrtle (*Lagerstroemia indica*), liquid amber (*Liquidamber styraciflua*), edible fig (*Ficus carica*), and privet (*Ligustrum* sp.).

3.8.2.2.6 Special-Status Plant Species

Special-status plant species are plants that are legally protected under CESA, ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. For the purposes of this program analysis, special-status plant species fall into the following categories:

- species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants]; various notices in the *Federal Register* [FR] [proposed species]);
- species that are candidates for possible future listing as threatened or endangered under ESA (73 FR 75178, December 10, 2008);
- species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 CCR 670.5);
- species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380);
- plants listed as rare under CNPPA (Fish and Game Code 1900 *et seq.);*
- plants considered by CNPS to be "rare, threatened, or endangered in California" (California Native Plant Society 2009a: Lists 1B and 2); and
- plants listed by CNPS as plants about which more information is needed to determine their status, and plants of limited distribution (California Native Plant Society 2009a: Lists 3 and 4), which may be included as special-status species based on local significance or recent biological information.

A total of 34 special-status plant species were identified as occurring in the vicinity of the study area (California Natural Diversity Database 2009; California Native Plant Society 2009a; U.S. Fish and Wildlife Service 2009). The status, distribution, habitat requirements, and identification period of the 34 species are shown in Table 3.8-3. Two of the 34 species—adobe-lily (*Fritillaria pluriflora*) and little mousetail (*Myosurus minimus* ssp. *apus*)—occur at elevations outside the elevation range of the study area. Of the remaining 32 species, seven are federally or state-listed as endangered or threatened: Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*), soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*), palmate-bracted bird's-beak (*Cordylanthus palmatus*), Boggs Lake hedge hyssop (*Gratiola heterosepala*), Contra Costa goldfields (*Lasthenia conjugens*), Colusa grass (*Neostapfia colusana*), and Crampton's tuctoria (*Tuctoria mucronata*). The other 25 special-status plant species are listed only on CNPS lists. Riparian habitat, grasslands, and marshes are natural communities observed in the study area that represent potential habitat for special-status plants. Vernal pool

habitat was not observed during the reconnaissance-level field surveys, but some portions of the study area were not accessible at the time of the surveys. The closest special-status plant occurrence to the study area is rose-mallow (*Hibiscus lasiocarpos*) that was documented less than 1 mile away from the Sacramento River North Levee (California Natural Diversity Database 2009).

Table 3.8-3. Special-Status Plants Identified as Occurring in the Vicinity of the Study Area

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Blooming Period	Potential for Occurrence in Study Area
Ferris's milk vetch *Astragalus tener* var. *ferrisiae*	–/–/1B.1	Historic range included the Central Valley from Butte to Alameda Counties; currently only occurs in Butte and Glenn Counties	Seasonally wet areas in meadows and seeps, sub-alkaline flats in valley and foothill grassland; 16–246 feet	Apr–May	Potential habitat present in grasslands but suitable microhabitat (i.e. alkaline soils) may not be present.
Alkali milk vetch *Astragalus tener* var. *tener*	–/–/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, eastern San Francisco Bay	Playas, on adobe clay in valley and foothill grassland, vernal pools on alkali soils; below 197 feet	Mar–Jun	Potential habitat present in grasslands but suitable microhabitat (i.e. adobe clay) may not be present.
Heartscale *Atriplex cordulata*	–/–/1B.2	Western Central Valley and valleys of adjacent foothills	Saline or alkaline soils in chenopod scrub, meadows and seeps, sandy areas in valley and foothill grassland; below 1,230 feet	Apr–Oct	Potential habitat present in grasslands but suitable microhabitat (i.e., soil type) may not be present.
Brittlescale *Atriplex depressa*	–/–/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools; below 1,050 feet	Apr–Oct	Potential habitat present in grasslands but suitable microhabitat (i.e. alkaline soils) may not be present.
San Joaquin saltscale *Atriplex joaquiniana*	–/–/1B.2	Western edge of the Central Valley from Glenn to Tulare Counties	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 2,739 feet	Apr–Oct	Potential habitat present in grasslands but suitable microhabitat (i.e. alkaline soils) may not be present.
Vernal pool smallscale *Atriplex persistens*	–/–/1B.2	Central Valley from Glenn to Tulare Counties	Alkaline vernal pools; 33–377 feet	Jun–Oct	Habitat potentially present in study area.
Bristly sedge *Carex comosa*	–/–/2.1	Inner North Coast Ranges, High Cascade Range, Central Valley, northern Central Coast, San Francisco Bay, San Bernardino mountains, Modoc Plateau	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland; below 2,050 feet	May–Sep	Potential habitat present in marshes and grassland in study area.

[1] Floristic provinces as defined in Hickman 1993.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Blooming Period	Potential for Occurrence in Study Area
Pappose tarplant *Centromadia parryi* ssp. *parryi*	–/–/1B.2	Southern North Coast Ranges, southern Sacramento Valley, northern and central Western California	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley and foothill grassland; below 1,378 feet	May–Nov	Potential habitat present in marshes and grassland but suitable microhabitat (i.e., salt marsh, vernally mesic grassland) may not be present.
Bolander's water-hemlock *Cicuta maculata* var. *bolanderi*	–/–/2.1	Southern Sacramento Valley, Central Coast, South Coast	Coastal, freshwater, or brackish marshes and swamps; below 656 feet	Jul–Sep	Potential habitat present in marshes in study area.
Suisun thistle *Cirsium hydrophilum* var. *hydrophilum*	E/–/1B.1	Known from only two extant occurrences on Grizzly Island in Solano County	Salt marshes and swamps; below 3 feet	Jun–Sep	Potential habitat present in marshes but suitable microhabitat requirements (i.e., high alkalinity) may not be met.
Soft bird's-beak *Cordylanthus mollis* ssp. *mollis*	E/R/1B.2	Northern Central Coast with occurrences in Contra Costa, Marin*, Napa, Sacramento*, Solano, and Sonoma* Counties	Coastal salt marshes and swamps; below 10 feet	Jul–Nov	Potential habitat present in marshes but suitable microhabitat requirements (i.e., high alkalinity) may not be met.
Palmate-bracted bird's-beak *Cordylanthus palmatus*	E/E/1B.1	Livermore Valley and scattered locations in the Central Valley from Colusa to Fresno Counties	Alkaline grassland, alkali meadow, chenopod scrub; 16–508 meters	May–Oct	Potential habitat present in grasslands but suitable microhabitat (i.e. alkaline soils) may not be present.
Dwarf downingia *Downingia pusilla*	–/–/2.2	Inner North Coast Ranges, southern Sacramento Valley, northern and central San Joaquin Valley	Mesic areas in valley and foothill grassland, vernal pools; below 1,460 feet	Mar–May	Potential habitat present in grasslands but suitable microhabitat (i.e., mesic areas) may not be present.
Stinkbells *Fritillaria agrestis*	–/–/4.2	Outer North Coast Ranges, Sierra Nevada foothills, Central Valley, Central Western California	Clay, sometimes serpentine soils in chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland; 33–5,102 feet	Mar–Jun	Potential habitat present in grasslands but suitable microhabitat (i.e., clay, serpentine soils) may not be present.
Fragrant fritillary *Fritillaria liliacea*	–/–/1B.2	Central Western California with occurrences in Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano, and Sonoma Counties	Coastal prairie, coastal scrub, valley and foothill grassland, cismontane woodland, often on serpentine; 10–1,345 feet	Feb–Apr	Potential habitat present in grasslands, but suitable microhabitat (i.e., serpentine) may not be present.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Blooming Period	Potential for Occurrence in Study Area
Adobe-lily *Fritillaria pluriflora*	–/–/1B.2	Northern Sierra Nevada foothills, Inner North Coast Ranges, edges of Sacramento Valley	Often adobe soils in chaparral, cismontane woodland, valley and foothill grassland; 197–2,313 feet	Feb–Apr	Species occurs outside elevation of the study area.
Boggs Lake hedge hyssop *Gratiola heterosepala*	–/E/1B.2	Inner North Coast Ranges, central Sierra Nevada foothills, Sacramento Valley, Modoc Plateau	Marshes and swamps along lake margins, vernal pools on clay soils; 32–7,792 feet	Apr–Aug	Potential habitat present in marshes. Vernal pool habitat potentially present.
Rose-mallow *Hibiscus lasiocarpos*	–/–/2.2	Central and southern Sacramento Valley, deltaic Central Valley, and elsewhere in the U.S.	Freshwater marsh along rivers and sloughs; below 394 feet	Jun–Sep	Potential habitat present in marshes and nearest occurrence is ~1 mile from the Sacramento River North Levee.
Carquinez goldenbush *Isocoma arguta*	–/–/1B.1	Deltaic Sacramento Valley in the Suisun Slough	Alkaline valley and foothill grassland; 3–66 feet	Aug–Dec	Potential habitat present in grasslands but suitable microhabitat (i.e. alkaline soils) may not be present.
Northern California black walnut *Juglans hindsii*	–/–/1B.1	Last two native stands in Napa and Contra Costa Counties; historically widespread through southern Inner North Coast Ranges, southern Sacramento Valley, northern San Joaquin Valley, San Francisco Bay	Riparian scrub and riparian woodland; below 1,443 feet	Apr–May	Potential habitat present; no native stands observed during reconnaissance-level field surveys in 2007.
Contra Costa goldfields *Lasthenia conjugens*	E/–/1B.1	North Coast, southern Sacramento Valley, San Francisco Bay, South Coast	Mesic areas in cismontane woodland, alkaline playas, valley and foothill grassland, vernal pools; below 1,542 feet	Mar–Jun	Potential habitat present in grasslands. Vernal pool habitat potentially present.
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	–/–/1B.2	Central Valley, San Francisco Bay	Freshwater and brackish marshes and swamps; below 13 feet	May–Jul (uncommonly Sep)	Potential habitat present in marshes.
Legenere *Legenere limosa*	–/–/1B.1	Sacramento Valley, North Coast Ranges, northern San Joaquin Valley and Santa Cruz mountains	Vernal pools; below 2,887 feet	Apr–Jun	Habitat potentially present in study area.
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	–/–/1B.2	Southern Sacramento Valley	Alkaline flats in valley and foothill grassland; 32–656 feet	Mar–May	Potential habitat present in grasslands but suitable microhabitat (i.e., alkaline soils) may not be present.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Blooming Period	Potential for Occurrence in Study Area
Mason's lilaeopsis *Lilaeopsis masonii*	–/R/1B.1	Southern Sacramento Valley, northeastern San Francisco Bay	Riparian scrub, brackish or freshwater marshes and swamps; below 33 feet	Apr–Nov	Potential habitat present in riparian habitat and marshes.
Delta mudwort *Limosella subulata*	–/–/2.1	Deltaic Central Valley with occurrences in Contra Costa, Sacramento, San Joaquin, and Solano Counties; Oregon	Marshes and swamps; below 10 feet	May–Aug	Potential habitat present in marshes.
Little mousetail *Myosurus minimus* ssp. *apus*	–/–/3.1	Central Valley, San Francisco Bay area, southern Outer Coast Ranges, South Coast	Alkaline soils in valley and foothill grassland and vernal pools; 66–2,100 feet	Mar–Jun	Potential habitat present in grasslands but suitable microhabitat (i.e. alkaline soils) may not be present. Vernal pool habitat potentially present.
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1	Inner North Coast Ranges, western Sacramento Valley	Mesic areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools;16–5,709 feet	Apr–Jul	Moderate; potential habitat present in grasslands but suitable microhabitat (i.e., mesic areas) may not be present
Colusa grass *Neostapfia colusana*	T/E/1B.1	Central Valley with scattered occurrences from Colusa to Merced Counties	Adobe soils of vernal pools; 16–656 feet	May–Aug	Habitat potentially present in study area.
Bearded popcorn-flower *Plagiobothrys hystriculus*	–/–/1B.1	Presumed extinct until recent rediscovery in the Montezuma Hills	Often vernal swales in mesic valley and foothill grassland, vernal pool margins; below 171 feet	Apr–May	Potential habitat present in grasslands, but suitable microhabitat (i.e., vernal swales) may not be present. Vernal pool habitat potentially present.
Sanford's arrowhead *Sagittaria sanfordii*	–/–/1B.2	Scattered locations in Central Valley and Coast Ranges from Del North to Fresno Counties	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet	May–Oct	Moderate; potential habitat present in marshes in the study area.
Side-flowering skullcap *Scutellaria lateriflora*	–/–/2.2	Northern San Joaquin Valley, east of Sierra Nevada; New Mexico, Oregon	Mesic meadows and seeps, marshes and swamps; below 1,640 feet	Jul–Sep	Potential habitat present in marshes.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Blooming Period	Potential for Occurrence in Study Area
Suisun Marsh aster *Symphyotrichum lentum* (formerly *Aster lentus*)	–/–/1B.2	Sacramento Valley, Central Coast, San Francisco Bay	Brackish and freshwater marshes and swamps; below 10 feet	May–Nov	Potential habitat present in marshes.
Crampton's tuctoria *Tuctoria mucronata*	E/E/1B.1	Southwestern Sacramento Valley, Solano and Yolo Counties	Mesic areas in valley and foothill grassland, vernal pools; 16–33 feet	Apr–Aug	Potential habitat present in grasslands but suitable microhabitat (i.e., mesic areas) may not be present. Vernal pool habitat potentially present.

[a] Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.
T = listed as threatened under the Federal Endangered Species Act.
– = no listing.

State

E = listed as endangered under the California Endangered Species Act.
R = listed as rare under the California Native Plant Protection Act (this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
– = no listing.

California Native Plant Society (CNPS)

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
3 = List 3 species: more information is needed about this plant
4 = List 4 species: limited distribution and on a watch list.
0.1 = seriously endangered in California.
0.2 = fairly endangered in California.
* = presumed extirpated from that County.

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3.8.2.2.7 Invasive Plant Species

Plant species that are considered invasive by the California Department of Food and Agriculture and California Invasive Plant Council are well represented and fairly widespread within the study area, particularly in grassland and vacant areas (California Invasive Plant Council 2006, 2007; California Department of Food and Agriculture 2009). The California Department of Food and Agriculture and California Invasive Plant Council ratings for the invasive species observed during the site visits are provided in the plant list for the study area (Appendix F).

3.8.2.2.8 Protected Tree Resources

The study area contains numerous trees (e.g., valley oaks, interior live oaks [*Q. wislizeni*]) that may be considered heritage or landmark trees under the City's Tree Preservation Ordinance.

3.8.3 Environmental Consequences

This section describes the vegetation and wetlands effects associated with the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. How this effect differs among reaches is discussed, if applicable. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.8.3.1 Assessment Methods

Evaluation of the vegetation and wetland effects in this section is based on the information provided by technical maps, reports, and other documents that describe the resource conditions of the study area. This information was then compared to the type and location of proposed flood and recreation alternatives to determine whether effects would occur.

3.8.3.2 Determination of Effects

For this analysis, based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.), an effect pertaining to vegetation and wetlands was considered an adverse effect under NEPA and a significant impact under CEQA if it would:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by DFG or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by CWA Section 404 (including, but not limited to, marshes and vernal pools) through direct removal, filling, hydrological interruption, or other means;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan.

3.8.3.2.1 Effect Assumptions

The following assumptions were made regarding program effects on vegetation and wetlands in the study area.

- All program construction activities, including equipment staging and access, would take place only within the study area.
- Project-level analyses would be conducted to assess the effects of future individual projects along the nine levee reaches.
- The program would comply with USACE's policy on vegetation and levees (i.e., no vegetation is permitted within the levee's operation and maintenance zone, which includes the levee itself and an area extending 15 feet from the landside and waterside toes). These areas would be maintained free of woody vegetation in perpetuity.
- Fill or borrow material would be obtained from a quarry or other authorized location.
- There would be effects related to the routine operation or maintenance activities under the proposed program. WSAFCA would continue current levee maintenance actions (as described in Chapter 2, Alternatives). Maintenance of the relief wells and lateral drainage system would be performed from maintenance roads.
- Discharge of fill into waters of the United States associated with the proposed program would require a Rivers and Harbors Act Section 10 permit, a CWA Section 404 permit from the USACE Sacramento District, and CWA Section 401 certification from the Central Valley RWQCB. Before construction begins, WSAFCA would obtain all necessary permits pertaining to affected waters of the United States. The permitting process would also require compensation for construction-, operation-, and maintenance-related effects.
- Grading would require a CWA Section 402 permit and preparation of a SWPPP.
- Grading or other construction activities within the bed, bank, or channel of a stream would require a streambed alteration agreement from DFG.

3.8.3.2.2 Effect Mechanisms

Vegetation and wetland resources could be directly and indirectly affected by the proposed program. The following types of activities could cause varying degrees of effects on these resources:

- grading, and fill placement during construction of levee alternatives;
- channel dewatering or installation of temporary water-diversion structures;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site into adjacent areas;
- introduction or spread of invasive plant species into adjacent open space areas; and

- runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for levee alternatives, operations, and maintenance into sensitive biological resource areas (e.g., riparian habitat, wetlands).

3.8.3.3 Effects and Mitigation Measures

3.8.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue. No construction-related effects on vegetation or waters of United States would occur.

Without levee improvements, there is the continued risk of levee failure. Under these conditions, any of the levee deficiencies could cause portions of the levee system to fail, triggering widespread flooding and extensive damage. As noted in the description of the No Action Alternative, a catastrophic levee failure would result in flooding and inundation up to 15 feet in certain areas. Flooding of this magnitude could significantly affect vegetation by uprooting plants, subjecting vegetation to extended inundation and stress, eroding the soil, and otherwise damaging the vegetation by hydraulic force. The potential construction footprint area alone (which includes a 500-foot-wide levee corridor) contains 236.5 acres of valley foothill riparian (a sensitive natural community) and 16.4 acres of woodlands and forest, among other land cover types. Loss or damage to these land cover types would result in significant short- and long-term effects on habitat quality and the wildlife that use these habitats. Some vegetation is considered special-status or supports habitat for endangered and special-status species (e.g., valley elderberry longhorn beetle). In addition, cleanup and repair activities could result in damage or removal of vegetation (including special-status species) and the disturbance or fill of waters of the United States. All of these effects would be considered significant; however, given the uncertainty of the occurrence or magnitude of such an event, potential effects on vegetation and waters of the United States cannot be fully quantified based on available information.

In its levee vegetation guidance, USACE has established a woody vegetation-free zone required for operations and maintenance of Federal project levees. Woody vegetation has been allowed to persist within the study area and more broadly throughout the SRFCP area in part to provide the functions and values attributed to riparian vegetation. However, in light of recent levee failures and flooding disasters in the United States (e.g., the flooding related to Hurricanes Katrina and Rita), compliance with the vegetation-free zone will be more strictly adhered to and enforced.

Compliance with the levee vegetation guidance could result in the removal of a substantial amount of vegetation, including vegetation that comprises riparian habitat and supports fish and wildlife populations (including special-status species). But for areas where a setback levee is proposed, which may allow existing vegetation to be preserved, or where the vegetation is found to be in compliance with USACE levee vegetation guidance, the No Action Alternative and flood and recreation program alternatives could result in effects on vegetation and wetlands that are comparatively similar. However, absent a site-specific study of the application of the USACE levee vegetation guidance, calculation of the magnitude and significance of effects are too speculative based on available information.

3.8.3.3.2 Flood and Recreation Program Alternatives

Effect VEG-1: Permanent Loss of Woody Riparian Vegetation from Levee Vegetation Removal

All levee alternatives proposed under the WSLIP will follow USACE's policies regarding vegetation on levees, which forbid all woody vegetation on the crown, slopes, and within 15 feet of the waterside and landside levee toes. These zones will be maintained free of woody vegetation in perpetuity. Thus, the removal of a substantial amount of mature trees and vegetation from the banks of the Sacramento River may be required. The woody riparian community in the study area (i.e., valley foothill riparian habitat) is considered a sensitive natural community.

Permanent loss of the woody vegetation in compliance with USACE's policies would result in a significant effect on riparian habitat. The full extent of this effect is dependent on what portion of the existing levee would be officially deemed as the levee prism according to USACE. In some cases, the current levees are wider than the minimum requirements (or may become wider with the implementation of program alternatives such as an adjacent levee raise) and existing vegetation may fall outside of the vegetation-free zone. Moreover, dependent on site conditions, variances may be issued on a case-by-case basis that would allow vegetation to remain. Therefore, these effects are considered significant to significant and avoidable. Implementation of Mitigation Measure VEG-MM-1 would reduce but may not fully compensate for effects.

Program Alternatives Associated with This Effect

Implementation of all flood and recreation program alternatives could cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect VEG-1 Finding	With Mitigation
Significant	Potentially significant and unavoidable

Mitigation

Mitigation Measure VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat

For direct effects on woody riparian habitat that cannot be avoided, WSAFCA will compensate for the loss of riparian habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with the appropriate state and Federal agencies during the permitting process. Compensation will be provided based on the ratio determined (e.g., 2:1= 2 acres restored/created/enhanced or credits purchased for every 1 acre removed) and may be a combination of off-site restoration or mitigation credits. WSAFCA will develop a restoration and monitoring plan that describes how riparian habitat will be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and Federal agencies.

If WSAFCA identifies on-site areas (adjacent to the levees) that are outside the USACE vegetation-free zone and chooses to compensate on site or in the project vicinity, a revegetation plan will be prepared. The revegetation plan will be developed prior to the removal of existing riparian vegetation and will be conducted on site or in the project vicinity to the extent feasible; however, mitigation site selection will avoid areas where future levee alternatives or maintenance is likely.

The revegetation plan will be prepared by a qualified restoration ecologist and reviewed by the appropriate agencies. The revegetation plan will specify the planting stock appropriate for each riparian land cover type and each mitigation site, ensuring the use of genetic stock from the project area. The plan will employ the most successful techniques available at the time of planting. Success criteria will be established as part of the plan. Plantings will be maintained for a minimum of 5 years, including weed removal, irrigation, and herbivory protection.

WSAFCA will monitor the plantings annually for 4 years, followed by monitoring every 2 years for the next 6 years to ensure that the plantings have established successfully. WSAFCA will submit annual monitoring reports of survival to the regulatory agencies issuing permits related to habitat effects, including DFG, USACE, NMFS, and USFWS. Replanting will be necessary if success criteria are not met. The riparian habitat mitigation will be considered successful when the sapling trees established meet the success criteria, the habitat no longer requires active management, and vegetation is arranged in groups that, when mature, replicate the area, natural structure, and species composition of similar riparian habitats in the region.

Effect VEG-2: Potential Loss of Special-Status Plant Populations Caused by Habitat Loss Resulting from Program Construction

Construction activities associated with the program would result in ground disturbance that would remove one or more habitats that could potentially contain special-status plant populations. Program construction activities could result in the direct loss or indirect disturbance of special-status plants that are known to grow or that could occur in the program area (see Table 3.8-3 for a list of these species). Effects on special-status plants could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Because WSAFCA cannot guarantee that special-status plants would be avoided during future activities, this levee deficiency treatment could result in a significant impact on special-status plants. Depending on the plant (listed versus unlisted) and the extent of impact on the population, implementation of mitigation measures VEG-MM-2, and if applicable, mitigation measures VEG-MM-3, VEG-MM-4, VEG-MM-5, and VEG-MM-6 may avoid or reduce this future effect to a less-than-significant level. The final significance

determination will need to be made on a project-by-project basis for future phases of the proposed program after field surveys have been conducted (mitigation measure VEG-MM-2) and through consultation with the appropriate resource agency (USFWS and/or DFG). Because the effectiveness of measures to reduce these effects to lesser levels is not known at this time, this effect is considered significant and potentially unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VEG-2 Finding	With Mitigation
Significant	Less than significant to potentially significant and unavoidable

Mitigation

Mitigation Measure VEG-MM-2: Retain Qualified Botanists to Conduct Floristic Surveys for Special-Status Plants during Appropriate Identification Periods

WSAFCA will retain qualified botanists to survey the study area to document the presence of special-status plants before project implementation. The botanists will conduct a floristic survey that follows the DFG botanical survey guidelines (California Department of Fish and Game 2000). All plant species observed will be identified to the level necessary to determine whether they qualify as special-status plants or are plant species with unusual or significant range extensions. The guidelines also require that field surveys be conducted when special-status plants that could occur in the area are evident and identifiable, generally during the blooming period. To account for different special-status plant identification periods, one or more series of field surveys may be required in spring and summer.

Special-status plant populations identified during the field surveys will be mapped and documented as part of the public record.

Mitigation Measure VEG-MM-3: Redesign Proposed Projects to Avoid Substantial Effects on Special-Status Plants

If one or more special-status plants are identified in the study area during preconstruction surveys, WSAFCA will redesign or modify proposed project components of the program to avoid indirect or direct effects on special-status plants.

If complete avoidance of special-status plants is not feasible, the effects of the proposed program on special-status plants would be significant and unavoidable.

If special-status plants can be avoided by redesigning proposed projects, implementation of Mitigation Measures VEG-MM-4, VEG-MM-5, and VEG-MM-6 would avoid significant effects on special-status plants. Avoidance, minimization, and compensation measures for riparian habitat, wetlands, and protected trees are discussed separately below under their respective effects (Effects VEG-3, VEG-4, and VEG-5).

Mitigation Measure VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Before any work occurs in the study area, including grading, a qualified biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid effects on sensitive biological resources (e.g., riparian habitat, special-status species, special-status wildlife habitat) and the penalties for not complying with permit requirements. The biologist will inform all construction personnel about the life history of special-status species with potential for occurrence on site, the importance of maintaining habitat, and the terms and conditions of the biological opinion or other authorizing document. Proof of this instruction will be submitted to USFWS, DFG, or other overseeing agency, as appropriate.

The training will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on special-status species during project construction. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Educational training will be conducted for new personnel as they are brought on the job during the construction period. General restrictions and guidelines for vegetation and wildlife that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the project site.
- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.
- All food-related trash will be disposed of in closed containers and removed from the study area at least once a week during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the project site.
- No pets or firearms will be allowed in the project site.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.

For special-status wildlife, any worker who inadvertently injures or kills a special-status wildlife species (discussed in Section 3.10, Wildlife) or finds one dead, injured, or entrapped will immediately report the incident to the biological monitor. The monitor will immediately notify WSAFCA, who will provide verbal notification to the USFWS Endangered Species Office or the local DFG warden or biologist within 3 working days. WSAFCA will follow up with written notification to USFWS or DFG within 5 working days.

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone

The construction specifications will require that WSAFCA retain a qualified biologist to identify sensitive biological resources (e.g., special-status species, riparian habitat, wetlands, elderberry shrubs) adjacent to the construction zone that are to be avoided during construction. Sensitive biological resources located adjacent to the directly affected area required for construction, including staging and access, will be fenced off to avoid disturbance in these areas. If necessary, concrete barriers will also be installed to protect sensitive biological resources in areas adjacent to the directly affected area.

Before construction, the contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing (and, if necessary, concrete barriers) and will place stakes around the sensitive biological resources to indicate their locations. The protected area will be clearly identified on the construction specifications. The fencing will be installed at least 20 feet from each sensitive biological resource and will be in place before construction activities are initiated. The fencing will be maintained by WSAFCA or its contractor throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is replaced.

Mitigation Measure VEG-MM-6: Retain a Biological Monitor

The program proponent will retain qualified biologists to monitor construction activities adjacent to sensitive biological resources (e.g., special-status species, riparian habitat, wetlands, elderberry shrubs). The biologists will assist the construction crew, as needed, to comply with all program implementation restrictions and guidelines. In addition, the biologists will be responsible for ensuring that the program proponent or its contractors maintain the construction barrier fencing adjacent to sensitive biological resources.

Effect VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Program Construction

Riparian habitat that occurs outside of the USACE vegetation-free zones would be disturbed or removed during construction activities associated with the proposed program flood and recreation alternatives. The disturbance or removal of riparian vegetation as a result of the proposed program would be considered a significant effect. Implementation of Mitigation Measures VEG-MM-1, VEG-MM-4, VEG-MM-5, VEG-MM-6, and VEG-MM-7 would reduce this effect to a lesser level.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect VEG-3 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat

The implementation of Mitigation Measure VEG-MM-1 under Effect Veg-3 may include on-site woody riparian habitat restoration or creation in addition to, or in place of, off-site restoration or mitigation credits.

Mitigation Measure VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone

Mitigation Measure VEG-MM-6: Retain a Biological Monitor

Mitigation Measure VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources

WSAFCA will redesign proposed projects to avoid and minimize effects on sensitive biological resources (e.g., riparian areas outside the USACE woody vegetation-free zones, wetlands, protected trees).

Effect VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction

The study area contains numerous features that are or have the potential to be waters of the United States, including wetlands. These features include, but are not limited to, emergent wetlands (approximately 86 acres), irrigated grain crops (approximately 20 acres), open water (approximately 413 acres), and seasonal wetlands (0.3 acre). Construction activities associated with this treatment would result in the loss of waters of the United States, including wetlands. This effect would be considered a significant effect because the proposed program would have a significant effect on wetlands and other waters that are protected under Federal law through direct removal, filling, hydrological interruption, or other means. Implementation of Mitigation Measures VEG-MM-4, VEG-MM-5, VEG-MM-6, VEG-MM-7, and VEG-MM-8 would reduce this effect to a lesser level.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in-place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VEG-4 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone

Mitigation Measure VEG-MM-6: Retain a Biological Monitor

Mitigation Measure VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources

Mitigation Measure VEG-MM-8: Compensate for the Loss of Wetlands and Other Waters

Compensation for the loss of wetlands will include restoring or enhancing in-kind wetland habitat at a mitigation ratio that will be developed in coordination with regulatory agencies to ensure no net loss of wetland habitat functions and values. Before the removal of existing emergent wetland vegetation, WSAFCA will prepare a revegetation plan to compensate for the loss of wetland habitat and submit the plan to the appropriate regulatory agencies for review. The revegetation plan will be prepared by a qualified restoration ecologist. The revegetation plan will specify the planting stock appropriate for each wetland land cover type and each mitigation site, ensuring the use of genetic stock from the project area. The plan will employ the most successful techniques available at the time of planting. Success criteria will be established as part of the plan. The revegetation will be conducted on site or in the vicinity to the extent feasible, but mitigation site selection will avoid areas where future levee alternatives or maintenance would be likely. If off-site mitigation is necessary, a location that does not currently support wetlands but is capable of supporting wetland habitats should be selected. An area that currently supports minimal habitat value would be desirable. WSAFCA will implement the revegetation plan, maintain plantings for a minimum of 5 years (including weed removal, irrigation, and herbivory protection), and conduct annual monitoring for 4 years, followed by monitoring every 2 years for the next 6 years. Existing native wetland vegetation from the affected sites should be harvested and maintained for replanting after construction.

Effect VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction

The study area contains numerous trees that may be considered heritage or landmark trees under the City's Tree Preservation Ordinance. Construction activities associated with this treatment would result in the loss of protected trees, which would conflict with the local ordinance. This would be a significant impact. Implementation mitigation measures would reduce this effect to a less-than-significant level.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect VEG-5 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone

Mitigation Measure VEG-MM-6: Retain a Biological Monitor

Mitigation Measure VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources

Mitigation Measure VEG-MM-9: Conduct a Tree Survey

WSAFCA will retain a certified arborist to conduct a tree survey to identify protected trees in the study area. The arborist will document the results of the tree survey in a report that includes the location, species, size (diameter at breast height), overall health, and dripline diameter of the trees. If the arborist's survey does not identify any protected trees that would be removed or damaged as a result of the proposed program, no additional mitigation would be necessary. If protected trees are present, WSAFCA will implement Mitigation Measure VEG-MM-10.

Mitigation Measure VEG-MM-10: Compensate for Loss of Protected Trees

WSAFCA will apply for a tree permit for the removal of any protected trees during construction. WSAFCA will replace trees that must be removed with trees at or near the location of the effect or another location within West Sacramento approved by the City's tree administrator. WSAFCA will also replace the replacement tree if it dies within 3 years of the initial planting. Replacement is not required if a tree is removed because it poses a risk, hosts a plant parasite, or is otherwise an undesirable species or specimen at the discretion of the City's tree administrator.

Replacement trees are required at a ratio of 1:1 (i.e., 1-inch diameter of replacement plant for every 1-inch diameter of tree removed). Trees may also be mitigated through payment of an in-lieu fee, which will be used to purchase and plant trees elsewhere in West Sacramento. Mitigation will be subject to approval by the City's tree administrator and may consider species affected, replacement species, location, health and vigor, habitat value, and other factors to determine fair compensation for tree loss.

Effect VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction

Invasive plants are already present in the study area. However, construction activities associated with this treatment could introduce new invasive plants to the study area or contribute to the spread of existing invasive plants to un-infested areas outside the study area. Invasive plants or their seeds may be dispersed by construction equipment if appropriate prevention measures are not implemented. The introduction or spread of invasive plants as a result of the proposed project could have a significant effect on sensitive natural communities within and outside the study area by displacing native flora. The implementation of one or more of the BMPs described in the environmental commitment to avoid or minimize the spread or introduction of invasive plant species (Section 2.9 of Chapter 2, Alternatives) will ensure that the proposed program would not have a significant effect on sensitive natural communities from the introduction or spread of invasive plants.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VEG-6 Finding	With Mitigation
Less than significant	N/A

Effect VEG-7: Opportunity for Habitat Restoration in Enlarged Floodplain Following Program Construction

If the existing levee is removed during installation of the setback levee at the Sacramento River South Levee, the enlarged floodplain created between the water's edge and setback levee area could be dedicated to habitat restoration (e.g., riparian or marsh habitat) and revegetated accordingly. WSAFCA could retain a qualified restoration ecologist or landscape architect to develop a revegetation plan that would ensure the long-term duration of the function and value of the restored habitat. This effect would be beneficial.

Program Alternatives Associated with This Effect

Implementation of this alternative can cause this effect:

Program	Alternative
Flood	▪ Setback levee

Affected Reach

This beneficial effect would occur in the Sacramento South Levee reach if a setback levee treatment were selected.

Effect VEG-7 Finding	With Mitigation
Beneficial	N/A

Section 3.9
Fisheries and Aquatics

3.9.1 Introduction

This section describes the regulatory and environmental setting for fisheries resources and aquatic habitats, the effects on special-status fish species that would result from the proposed program, and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed below.

- USFWS list (dated February 4, 2009) of endangered, threatened, and proposed species for the study area (Appendix G)
- Published and unpublished reports
- Field survey on October 26, 2007
- ICF International file information

3.9.2 Affected Environment

3.9.2.1 Regulatory Setting

3.9.2.1.1 Federal

Endangered Species Act

The Federal ESA protects fish and wildlife species and their habitats that have been identified by NMFS or USFWS as threatened or endangered. *Endangered* refers to species, subspecies, or distinct population segments (DPSs) that are in danger of extinction through all or a significant portion of their range. *Threatened* refers to species, subspecies, or DPSs that are likely to become endangered in the near future.

ESA is administered by USFWS and NMFS. In general, NMFS is responsible for protection of ESA-listed marine species and anadromous fish, and USFWS is responsible for other listed species. Provisions of Sections 9 and 7 of ESA are relevant to this program and are summarized below.

Section 9: ESA Prohibitions

Section 9 of the ESA prohibits the take of any fish or wildlife species listed under ESA as endangered. Take of threatened species also is prohibited under Section 9, unless otherwise authorized by Federal regulations.[1] *Take*, as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is defined as

[1] In some cases, exceptions may be made for threatened species under ESA Section 4(d); in such cases, USFWS or NMFS issues a "4(d) rule" describing protections for the threatened species and specifying the circumstances under which take is allowed.

"any act that kills or injures the species, including significant habitat modification." In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under Federal jurisdiction.

Section 7: ESA Authorization Process for Federal Actions

Section 7 of the ESA provides a means for authorizing take of threatened and endangered species by Federal agencies. Under Section 7, the Federal agency conducting, funding, or permitting an action (the lead Federal agency, such as USACE) must consult with NMFS or USFWS, as appropriate, to ensure that the proposed program will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment (BA) to evaluate the nature and severity of the expected effect. In response, NMFS or USFWS issues a biological opinion (BO), with a determination that the proposed program either:

- may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or
- will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by NMFS or USFWS may stipulate discretionary "reasonable and prudent" conservation measures. If the project would not jeopardize a listed species, USFWS or NMFS issues an incidental take statement to authorize the proposed activity.

Critical Habitat

Critical habitat, as defined in ESA Section 3, is:

I. the specific area within the geographic area occupied by a species, at the time it is listed in accordance with ESA, on which are found those biological features
    i. essential to the conservation of the species, and
    ii. may require special management considerations or protection; and

II. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Aquatic habitats in the study area have been designated as critical habitat for the following species:

- Central Valley spring-run Chinook salmon,
- Central Valley winter-run Chinook salmon,
- Central Valley steelhead, and
- Delta smelt.

Clean Water Act

The CWA was enacted as an amendment to the Federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States.

The CWA serves as the primary Federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers EPA to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on pertinent sections of the CWA.

Section 404: Permits for Fill Placement in Waters and Wetlands

USACE and EPA regulate the discharge of dredged and fill material into waters of the United States under Section 404 of the CWA. USACE jurisdiction over non-tidal waters of the United States extends to the OHWM, provided the jurisdiction is not extended by the presence of wetlands (33 CFR Part 328, Section 328.4). The OHWM is defined in the Federal regulations to mean:

> [T]hat line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR Part 328, Section 328.3[e]).

USACE typically will exert jurisdiction over that portion of the project site that contains waters of the United States and adjacent or isolated wetlands. This jurisdiction equals approximately the bank-to-bank portion of a creek along its entire length up to the OHWM and adjacent wetland areas that will either be directly or indirectly adversely affected by a proposed project.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires all Federal agencies to consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The legislation states that migratory routes to and from anadromous fish spawning grounds should also be considered EFH. The phrase "adversely affect" refers to the creation of any effects that reduce the quality or quantity of EFH. Federal activities that occur outside an EFH but that may, nonetheless, have an effect on EFH waters and substrate must also be considered in the consultation process. Under the Magnuson-Stevens Act, effects on habitat managed under the Pacific Salmon Fishery Management Plan must also be considered.

3.9.2.1.2 State

California Endangered Species Act

CESA, which is administered by DFG, protects wildlife and plants listed by the California Fish and Game Commission as threatened and endangered under the act. CESA prohibits all persons from taking species that are state-listed as threatened or endangered except under certain circumstances; the CESA definition of take is any action or attempt to "hunt, pursue, catch, capture, or kill."

CESA Section 2081 provides a means by which agencies or individuals may obtain authorization for incidental take of state-listed species, except for certain species designated as "fully protected" under the California Fish and Game Code. Take must be incidental to, and not the purpose of, an otherwise lawful activity. Requirements for a Section 2081 permit are similar to those used in the ESA Section 7 process. They include identification of effects on listed species, development of mitigation measures that minimize and fully mitigate effects, development of a monitoring plan, and assurance of funding to implement mitigation and monitoring.

California Fish and Game Code Section 1600: Streambed Alteration Agreements

DFG has jurisdictional authority over wetland resources associated with rivers, streams, and lakes under Sections 1600–1607. DFG has the authority to regulate all work under the jurisdiction of the State of California that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In practice, DFG marks its jurisdictional limit at the top of the stream or lake bank, or the outer edge of the riparian vegetation, where present, and sometimes extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1600 may encompass a greater area than those regulated under CWA Section 404.

DFG enters into a streambed alteration agreement with an applicant and can impose conditions on the agreement to ensure that no net loss of wetland values or acreage will be incurred. The streambed or lakebed alteration agreement is not a permit, but a mutual agreement between DFG and the applicant.

3.9.2.1.3 Local

City of West Sacramento General Plan

Section VI, Natural Resources Goals and Policies, of the *City of West Sacramento General Plan* identifies policies designed to protect habitat and biological resources that are applicable to the resources located in the study area. The policies listed below are pertinent to fish resources in the project area (City of West Sacramento 2004, II-68-69).

Goal C: To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento

Policies:

2. The City shall support state and Federal policies for preservation and enhancement of riparian and wetland habitats by incorporating, as deemed appropriate, the findings and recommendations of the *Sacramento Greenway Plan*, California Department of Fish and Game and the U.S. Fish and Wildlife Service into site-specific development proposals.

3. The City shall require site-specific surveys to identify significant wildlife habitat and vegetation resources for development projects located in or near riparian or wetland areas.

4. The City shall support mitigation measures which provide for no net loss of riparian or wetland habitat acreage and value by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall seek replacement on at least a 1:1 basis. Replacement entails creating habitat that is similar in extent and ecological value to that displaced by the project. The replacement habitat should consist of locally occurring, native species and shall be located as close as possible to the project site or be part of a larger replacement habitat project.

7. The City shall seek to minimize the loss or degradation of wetland and riparian habitats at the following sites: Lake Washington and associated wetlands; Bee Lakes and associated riparian woodlands; riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal; and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.

9. The City shall seek to preserve populations of rare, threatened, and endangered species by ensuring that development does not adversely affect such species or by fully mitigating adverse effects.

10. The City shall not approve projects that would cause unmitigable impacts on rare, threatened, or endangered wildlife or plant species.

11. The City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.

12. Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.

13. The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties. In particular, native plants should be used along the Sacramento River and in areas adjacent to riparian and wetland habitats.

Yolo County General Plan

The *Yolo County General Plan* was adopted in 1983. The objective of the general plan is to provide guidance for the development of Yolo County. The general plan promotes the preservation of farm land and open spaces to minimize the area of urbanization. The Open Space and Recreation Element of the general plan was updated in 2002. The following goals, objectives, and policies are relevant to fish resources in the study area:

Goals and Supporting Objectives

- **OG-4:** Protect and manage local water resources.
    - **OO-5:** Provision for open space corridors within existing and future development.
- **OG-5:** Preserve and enhance existing biological resources.
    - **OO-6:** No net loss of wetland and/or riparian habitat.
    - **OO-7:** Maintenance of unique or sensitive plant or animal habitat.

Solano County General Plan

Chapter 4 of the *Solano County General Plan* identifies the following policies with respect to biological resources:

RS.P-1: Protect and enhance the county's natural habitats and diverse plant and animal communities, particularly occurrences of special-status species, wetlands, sensitive natural communities, and habitat connections.

RS.P-5: Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations.

3.9.2.2 Environmental Setting

This section discusses the existing conditions related to fisheries in the study area.

3.9.2.2.1 Study Area

The proposed program reaches are located in the city of West Sacramento in Yolo County, California, and range in elevation from approximately 15 feet to 25 feet above mean sea level. The study area includes the entire WSAFCA boundary, which encompasses portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the DWSC. The levee system associated with these waterways includes more than 50 miles of levees in RD 900, RD 537, RD 811, DWR Maintenance Area 4, and the DWSC (Figure 1-2, WSLIP Study Area). These levees completely surround the city.

Sacramento River

The Sacramento River serves as an important migration and juvenile rearing corridor for anadromous fish species, which have been the focus of many restoration programs for the Sacramento River system. Native fish, such as delta smelt and Sacramento splittail, also may spawn in the Sacramento River within the study area along shallow river margins and on adjacent floodplain habitat, when available.

Sacramento River North Levee Reach

The Sacramento River North Levee reach extends along the right bank of the Sacramento River from its confluence with the Sacramento Bypass downstream approximately 6.0 miles to the entrance to the barge canal. This section of the Sacramento River provides migratory habitat for anadromous fish such as steelhead, Chinook salmon, river lamprey, and green sturgeon. This reach contains riparian vegetation and shaded riverine aquatic (SRA) cover.

Sacramento River South Levee Reach

The Sacramento River South Levee reach extends along the right bank of the Sacramento River from the entrance of the barge canal downstream approximately 6.4 miles to the South Cross Levee. This section of the Sacramento River provides migratory habitat for anadromous fish such as steelhead, Chinook salmon, river lamprey, and green sturgeon. Riparian vegetation and SRA cover occur in this reach, although vegetation is less dense than it is in the Sacramento River North Levee reach.

Sacramento and Yolo Bypasses

The Sacramento and Yolo Bypasses provide emigration and rearing habitat for juvenile anadromous fish and spawning and rearing habitat for splittail. The occurrence of these life stages in the Sacramento and Yolo Bypasses is limited mainly to periods when flooding (via the Fremont and Sacramento Weirs) allows individuals to access the area from the Sacramento River. Sacramento splittail and juvenile Chinook salmon have been captured in the Sacramento Bypass (Jones & Stokes 2001). The Yolo Bypass seasonally provides habitat for delta smelt, splittail, steelhead, and Chinook salmon (Sommer et al. 2001). Most juveniles emigrate from the Sacramento and Yolo Bypasses during winter and spring before the floodplains become dry. Thus, the potential for these species' life stages to occur in these areas in any given year depends on the occurrence of flooding; the timing, magnitude, and duration of flooding; and the seasonal timing of specific life stages. However, the occurrence of these species is not limited to periods when the bypasses are flooded. In a trapping study at the Yolo Bypass Toe Drain, a perennial tidal channel that runs along the east side of the Yolo Bypass and drains adjacent fields, Harrell and Sommer (2003) found that adult Chinook salmon and white sturgeon (among a suite of other native and introduced fish species) occur in the toe drain even in years when the bypasses are not flooded.

Sacramento Bypass Levee Reach

The Sacramento Bypass Levee reach extends along the left bank of the Sacramento Bypass, approximately 1.2 miles from the Sacramento Weir, in a westerly direction (downstream) to its confluence with the left bank levee of the Yolo Bypass. This reach does not include the training levee that extends in a westerly direction approximately 0.4 mile into the Yolo Bypass.

This reach provides migratory and rearing habitat for emigrating juvenile salmonids, green sturgeon, and river lamprey when inundated during high winter and spring flows. Sacramento splittail also use the Sacramento Bypass for spawning and juvenile rearing. This reach is a floodplain habitat that is covered with terrestrial vegetation. No SRA cover occurs in this reach.

Yolo Bypass Levee Reach

The Yolo Bypass Levee reach extends along the east bank of the Yolo Bypass, approximately 3.8 miles from its intersection with the east bank levee of the Sacramento Bypass, in a southerly direction to its intersection with the DWSC West Levee.

The Yolo Bypass provides migratory and rearing habitat for emigrating juvenile salmonids, green sturgeon, and river lamprey when inundated during high winter and spring flows. Sacramento splittail also use the Yolo Bypass for spawning and juvenile rearing. The toe drain is in this reach and has little SRA cover.

Deep Water Ship Channel

The DWSC, which was constructed in 1963 to accommodate deep-draft ocean-going vessels, does not support spawning, rearing, or migratory habitat for special-status fish species. However, anadromous fish do stray into the DWSC because of its downstream connection with, and proximity to, the Sacramento River. Steelhead and Chinook salmon have been captured by DFG during intermittent studies in the DWSC (National Marine Fisheries Service n.d.). Fish that stray into the DWSC are unable to continue migrating upstream into the Sacramento River because the locks at the barge canal are permanently closed, and no fish passage facilities currently exist.

Port North Levee Reach

The Port North Levee reach includes the combination of levees, structures, and high ground along the northern bank of the barge canal and the DWSC channel from the Sacramento River west to the levee along the left bank of the Yolo Bypass. This area includes the ground surrounding the Port of West Sacramento's turning basin. This reach is highly channelized, with low-value rearing and migratory fish habitat, and sparse riparian vegetation and SRA cover.

Special-status fish can stray into the easternmost portion of the barge canal from the mainstem of the Sacramento River but are blocked from further migration up the barge canal and into the DWSC by the barge locks. During upstream migration, special-status fish could stray into the DWSC from the mainstem of the Sacramento River via Cache Slough and have access to the habitat along the westernmost portion of the Port North Levee. These special-status fish species include steelhead, Chinook salmon, river lamprey, and green sturgeon.

Port South Levee Reach

The Port South Levee reach includes the combination of levees and high ground along the southern bank of the barge canal and the DWSC from the Sacramento River west to the levee on the east bank of the DWSC. The same fish and migratory and rearing habitat occur as in the Port North Levee reach. This reach is highly channelized, and riparian vegetation and SRA cover are sparse.

Deep Water Ship Channel West Levee Reach

The DWSC West reach extends along the east bank of the Yolo Bypass, approximately 22 miles from its intersection with the western limit of the Port North Levee, in a southerly direction to Miners Slough. The same fish and migratory and rearing habitat occur as in the Port North Levee reach. The DWSC is highly channelized with no SRA cover.

Deep Water Ship Channel East Levee Reach

The DWSC East reach extends along the east bank of the DWSC, approximately 2.8 miles from the high ground making up the western limit of the Port South Levee reach, in a southerly direction to the intersection of Jefferson Boulevard with the South Cross Levee. The DWSC is highly channelized with no SRA cover. Fish migration through the DWSC to the Sacramento River is blocked by the barge locks.

South Cross Levee Reach

This reach extends for approximately 1.2 miles from the intersection of Jefferson Boulevard and the levee along the east bank of the DWSC to the Sacramento River where it intersects the southern limit of the Sacramento River South Levee reach. There is a drainage for runoff from the housing development in this reach, but it does not connect with the Sacramento River or the DWSC. No special-status fish species habitat occurs in this reach.

3.9.2.2.2 Aquatic Habitats

Aquatic habitats in the study area consist of perennial, intertidal, and seasonal habitats. Fish and other species use these habitats for growth, survival, and reproduction. Fish use these habitats differently, depending on species and life stage. Many different aquatic habitats exist in the study

area and can be characterized as nearshore and SRA cover, open water (pelagic), and floodplain. These habitats are described in greater detail below.

Nearshore and Shaded Riverine Aquatic Cover

Nearshore areas support large and diverse fish and wildlife populations. These areas are important to fish for rearing and migration because they create attachment sites for aquatic insects (a food source for fish) and provide fish with shelter from predators. For example, juvenile Chinook salmon and steelhead rely on nearshore habitats as fry, smolt, or yearlings and to some extent as adults. In addition, vegetated nearshore habitat can also provide spawning areas for some fish species, such as splittail, delta smelt, black bass, and sunfish. Riparian vegetation is a component of nearshore and SRA cover and directly influences the quality of fish habitat. Its presence has an effect on cover, food, instream habitat complexity, streambank stability, and temperature regulation. Large woody debris usually originates from riparian trees and provides habitat complexity in aquatic environments, an essential component of fish habitat. The roots of riparian vegetation at the land-water interface and on adjacent berms provide streambank stability and cover for rearing fish. (Meehan and Bjorn 1991.)

Cover describes the physical components of a stream environment that provide shelter and hiding, resting, rearing, holding, and feeding areas for fish and other aquatic organisms. Gravel, cobbles, boulders, ledges, undercut banks, aquatic plants, saplings, brush, trees, and instream woody material (e.g., tree limbs, logs, rootwads) all provide cover. The quantity and quality of cover for fish and aquatic invertebrates is a primary determinant of habitat availability and suitability. The occurrence of many aquatic species, including juvenile salmonids, depends on the size, density, and continuity of suitable cover.

Riparian vegetation also provides shade and an insulating canopy that moderates water temperatures in both summer and winter. While the influence of shade on regulating river temperatures decreases as rivers become larger, the moderating effects of shade on nearshore water temperatures may be important to some fish species, including juvenile salmonids, during the growing season.

Riparian vegetation also influences the food chain of a stream, providing organic detritus and terrestrial insects. Terrestrial organisms falling from overhanging branches contribute to the food base of the aquatic community. Salmonids in particular are primarily insectivores and feed mainly on drifting food organisms.

Habitat complexity of nearshore and SRA cover areas within the study area is variable and depends on the amount of adjacent riparian vegetation. Along the margins of the Sacramento River and toe drain, and where extensive riparian vegetation borders aquatic habitats, the extent of SRA cover is high. In contrast, riparian vegetation and SRA cover along the DWSC are relatively scarce because most of the shoreline is covered with riprap or maintained to control vegetation growth.

Open Water

Open water habitat includes areas of the Sacramento River channel, DWSC, and toe drain that are free of instream structure, such as vegetation and instream woody material, and away from the shoreline. Typically, open-water habitats have greater water depths and water velocities than nearshore habitat.

Delta smelt and striped bass are found primarily in open-water habitat. In addition, adult and juvenile salmonids use mid-channel areas for migration.

Floodplain

Recognition is growing that naturally functioning floodplains provide many benefits, including direct economic benefits, ecosystem services, and habitat for a wide diversity of species (Bayley 1991; Tockner and Stanford 2002, as cited in Ahearn et al. 2006). Floodplains provide freshwater habitat for the migration, reproduction, and rearing of native fishes (Moyle et al. 2003; Crain et al. 2004) and mitigate flood damage to human settlements (Sommer et al. 2001a).

Floodplains are highly productive habitats that flood during high flows in the winter and spring. Floodplains are important habitats for young fish, especially Chinook salmon and splittail (Moyle et al. 2005). Chinook salmon, which spawn in freshwater rivers and streams upstream of the Delta, use inundated floodplain habitats (when available) for rearing. Chinook salmon growth has been shown to be faster in floodplain habitat than in river systems (Sommer et al. 2001b). Sacramento splittail, which spawn in inundated floodplains, produce the highest numbers of young when flows are high and floodplain habitat is inundated (Moyle 2002).

3.9.2.2.3 Special-Status Fish Species

The special-status fish species listed below have the potential to occur in the study area.

- Sacramento River winter-run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha*)—FE/SE.
- Central Valley spring-run Chinook salmon ESU (*O. tshawytscha*)—FT/ST.
- Central Valley fall-/late fall–run Chinook salmon ESU (*O. tshawytscha*)—FSC/SSC.
- Central Valley steelhead DPS (*O. mykiss*)—FT.
- Southern DPS of North American green sturgeon (*Acipenser medirostris*)—FT/SSC.
- Delta smelt (*Hypomesus transpacificus*)—FT/ST.
- Sacramento splittail (*Pogonichthys macrolepidotus*)—SSC.
- River lamprey (*Lampetra ayresi*)—SSC.

Special-status fish species that occur or have the potential to occur in or near the study area, as well as their likely status in the study area, are presented in Table 3.9-1. Critical habitat for winter and spring-run Chinook salmon and Central Valley steelhead falls within the study area in the Sacramento River. In addition, the Sacramento and Yolo Bypasses are designated critical habitat for Central Valley steelhead (70 FR 52612:52617 September 2, 2005) and spring-run Chinook salmon (70 FR 52597:52601 September 2, 2005). Critical habitat for delta smelt includes the Sacramento River and the Yolo Bypass upstream to the I Street Bridge (U.S. Fish and Wildlife Service 2003).

Table 3.9-1. Special-Status Fish Species with Potential to Occur in the Study Area

Common and Scientific Name	Status[a] Federal/State	California Distribution	Habitats	Occurrence in the Study Area
Delta smelt *Hypomesus transpacificus*	T/T	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay	Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002).	High
Sacramento splittail *Pogonichthys macrolepidotus*	–/SSC	Occurs throughout the year in low-salinity waters and freshwater areas of the Sacramento–San Joaquin Delta, Yolo Bypass, Suisun Marsh, Napa River, and Petaluma River (Moyle 2002).	Spawning takes place among submerged and flooded vegetation in sloughs and the lower reaches of rivers.	High
Central Valley steelhead *Oncorhynchus mykiss*	T/–	Sacramento River and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools.	High—spawning during migration
Sacramento River winter-run Chinook salmon *Oncorhynchus tshawytscha*	E/E	Mainstem Sacramento River below Keswick Dam (Moyle 2002)	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C. Habitat types are riffles, runs, and pools. (Moyle 2002.)	High—spawning during migration
Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	T/T	Upper Sacramento River and Feather River	Has the same general habitat requirements as winter-run Chinook salmon. Coldwater pools are needed for holding adults (Moyle 2002).	High—spawning during migration
Central Valley fall-/late fall–run Chinook salmon *Oncorhynchus tshawytscha*	SC/SSC	Sacramento and San Joaquin Rivers and tributary Central Valley rivers	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0 to 12.5°C. Habitat types are riffles, runs, and pools (Moyle 2002).	High—spawning during migration

Common and Scientific Name	Status[a] Federal/State	California Distribution	Habitats	Occurrence in the Study Area
Green sturgeon (southern DPS) *Acipenser medirostris*	T/SSC	Sacramento, Klamath and Trinity Rivers (Moyle 2002)	Spawn in large river systems with well-oxygenated water, with temperatures from 8.0 to 14°C	High—spawning during migration
River lamprey *Lampetra ayresi*	–/SSC	Sacramento, San Joaquin, and Napa Rivers; tributaries of San Francisco Bay (Moyle 2002; Moyle et al. 1995)	Adults live in the ocean and migrate into fresh water to spawn	High—spawning during migration

[a] Species Definitions

Federal

E = endangered under the Federal Endangered Species Act
T = threatened under the Federal Endangered Species Act
SC = species of concern
– = no listing

State

E = endangered under the California Endangered Species Act
T = threatened under the California Endangered Species Act.
SSC = species of special concern
– = no listing

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Chinook Salmon

Chinook salmon are anadromous fish, meaning that adults live in marine environments and return to their natal freshwater streams to spawn. Juveniles rear in freshwater for a period of up to 1 year until smoltification (i.e., a physiological preparation for survival in marine environs) and subsequent ocean residence.

Four distinct runs of Chinook salmon occur in the Sacramento River system: winter-run, spring-run, fall-run, and late fall–run. The runs are named after the season of adult migration, with each run having a distinct combination of adult migration, spawning, juvenile residency, and smolt migration periods. In general, fall- and late fall-run Chinook salmon spawn soon after entering their natal streams, while spring- and winter-run Chinook salmon typically hold in their natal streams for up to several months before spawning.

Winter-Run

Both the ESA and CESA list the winter-run Chinook salmon ESU as an endangered species. Critical habitat for winter-run Chinook salmon includes the Sacramento River from Keswick Dam (RM 302) to Chipps Island (RM 0) in the Delta (National Marine Fisheries Service 1997).

Historically, winter-run Chinook salmon spawned in cold tributary streams upstream of present-day Shasta Reservoir, including the Little Sacramento, Pit, McCloud, and Fall Rivers and Battle Creek. Presently, winter-run Chinook salmon persist in the Sacramento River below Keswick Dam and are sustained by coldwater releases from Shasta Reservoir.

Adult winter-run Chinook salmon immigration (upstream migration) through the Delta and into the Sacramento River occurs from December through July, with peak immigration from January through April. Winter-run Chinook salmon spawn primarily in the mainstem Sacramento River between Keswick Dam (RM 302) and the Red Bluff Diversion Dam (RM 242). Winter-run Chinook salmon spawn between late April and mid-August, with peak spawning generally occurring in June (Snider et al. 2000) (Table 3.9-2).

Juvenile emigration (downstream migration) past the Red Bluff Diversion Dam (RM 242) begins in late July, peaks during September, and may extend through mid-March (National Marine Fisheries Service 1997). The peak period of juvenile emigration through the lower Sacramento River into the Delta generally occurs between January and April (National Marine Fisheries Service 1997) (Table 3.9-2). Differences in peak emigration periods between these two locations suggest that juvenile winter-run Chinook salmon may exhibit a sustained residence in the upper or middle reaches of the Sacramento River before entering the lower Sacramento River and the Delta. Although the location and extent of rearing in these lower or middle reaches is unknown, it is believed that the duration of fry presence in an area is directly related to the magnitude of river flows during the rearing period (Stevens 1989). Additional information on life history and habitat requirements is available in the NMFS BO, which was developed specifically to evaluate effects on winter-run Chinook salmon associated with Central Valley Project (CVP) and State Water Project (SWP) operations (National Marine Fisheries Service 1993).

Spring-Run

The Central Valley spring-run Chinook salmon ESU, which includes populations spawning in the Sacramento River and its tributaries, is listed as threatened under ESA and CESA. Critical habitat is

designated for spring-run Chinook salmon in the Sacramento River, but the Sacramento DWSC is excluded from the critical habitat designation (70 FR 52596).

Spring-run Chinook salmon historically occurred from the upper tributaries of the Sacramento River to the upper tributaries of the San Joaquin River. However, they have been extirpated from the San Joaquin River system. The only streams in the Central Valley with remaining wild spring-run Chinook salmon populations are the Sacramento River and its tributaries, including the Yuba River, Mill Creek, Deer Creek, and Butte Creek.

Spring-run Chinook salmon enter the Sacramento River from late March through September (Reynolds et al. 1993), but peak abundance of immigrating adults in the Delta and lower Sacramento River occurs from April through June (Table 3.9-2). Adult spring-run Chinook salmon remain in deep-water habitats downstream of spawning areas during summer until their eggs fully develop and become ready for spawning. This is the primary characteristic that distinguishes spring-run Chinook salmon from the other runs. Spring-run Chinook salmon spawn primarily upstream of the Red Bluff Diversion Dam and in the aforementioned tributaries. Spawning occurs from mid-August through early October (Reynolds et al. 1993) (Table 3.9-2). A small portion of an annual year-class may emigrate as post-emergent fry (less than 1.8 inches long) and reside in the Delta undergoing smoltification. However, most are believed to rear in the upper river and tributaries during winter and spring, emigrating as juveniles (more than 1.8 inches long). The timing of juvenile emigration from the spawning and rearing reaches can vary depending on tributary of origin and can occur from November through June (Table 3.9-2).

Fall- and Late Fall-Run

Central Valley fall-run and late fall–run Chinook salmon are commercially and recreationally important. These ESUs are Federal species of concern. Because the fall-run Chinook salmon is currently the largest run of Chinook salmon in the Sacramento River system, it continues to support commercial and recreational fisheries of significant economic importance.

All Central Valley streams that had adequate flows in the fall, even if they were intermittent during the summer, probably supported fall-run Chinook salmon. Unlike spring- and winter-run Chinook salmon that migrated to higher elevation streams, fall-run Chinook salmon likely were limited to streams of the valley floor and lower foothill reaches because of their egg-laden and generally deteriorated physical condition.

In general, adult fall-run Chinook salmon migrate into the Sacramento River and its tributaries from July through December, with immigration peaking from mid-October through November (Table 3.9-2). Fall-run Chinook salmon spawn in numerous tributaries of the Sacramento River, including the lower American River, lower Yuba River, Feather River, and tributaries of the upper Sacramento River. Most mainstem Sacramento River spawning occurs between Keswick Dam and the Red Bluff Diversion Dam. A greater extent of fall-run spawning, relative to the other three runs, occurs below the Red Bluff Diversion Dam, with limited spawning potentially occurring as far downstream as Tehama (RM 220) (Yoshiyama et al. 1996). Spawning generally occurs from October through December, with fry emergence typically beginning in late December and January (Table 3.9-2). Fall-run Chinook salmon emigrate as post-emergent fry, juveniles, and smolts after rearing in their natal streams for up to 6 months. Consequently, fall-run emigrants may be present in the lower Sacramento River from January through June (Reynolds et al. 1993) (Table 3.9-2) and remain in the Delta for variable lengths of time before ocean entry.

Adult immigration of late fall-run Chinook salmon into the Sacramento River generally begins in October, peaks in December, and ends in April (Moyle et al. 1995) (Table 3.9-2). Primary spawning areas for late fall-run Chinook salmon are located in tributaries of the upper Sacramento River (e.g., Battle Creek, Cottonwood Creek, Clear Creek, Mill Creek), although late fall-run Chinook salmon are believed to return to the Feather and Yuba Rivers as well (Moyle et al. 1995). Spawning in the mainstem Sacramento River occurs primarily from Keswick Dam (RM 302) to the Red Bluff Diversion Dam (RM 258), generally from January through April (Moyle et al. 1995). Juveniles emigrate through the lower Sacramento River primarily from October through April (Table 3.9-2).

Central Valley Steelhead

Central Valley steelhead is listed as threatened under the ESA. Critical habitat is designated for steelhead in the Sacramento River, but the Sacramento DWSC is excluded from the critical habitat designation (70 FR 52596). Steelhead, an anadromous variant of rainbow trout, is closely related to Pacific salmon. The species was once abundant in California coastal and Central Valley drainages. However, population numbers have declined significantly in recent years, especially in the tributaries of the Sacramento River. Steelhead typically migrate to marine waters after spending 1 year or more in fresh water. In the marine environment, they typically mature for 1 to 3 years before returning to their natal streams to spawn as 3- or 4-year-olds. Unlike Pacific salmon, steelhead are capable of spawning more than once before they die. Immigration of adult steelhead in the Sacramento River occurs in nearly all months but peaks in late September and October (Moyle 2002). The steelhead spawning season typically stretches from December through April (Table 3.9-2). After several months, fry emerge from the gravel and begin to feed. Juveniles rear in fresh water from 1 to 4 years (usually 2 years), then migrate to the ocean as smolts in the spring (March through June).

Sacramento Splittail

Sacramento splittail is a California species of special concern. Sacramento splittail is an endemic California minnow that was once widely distributed in lakes and rivers throughout the Central Valley, including the Sacramento River upstream to Redding and the American River as far east as Folsom (Moyle 2002). Present distribution includes Suisun Bay, the Napa and Petaluma Rivers (Sommer et al. 1997), the Sacramento River as far north as the Red Bluff Diversion Dam, portions of the Delta, and the San Joaquin River upstream of its confluence with the Tuolumne River (Moyle 2002).

Adult splittail usually reach sexual maturity in their second year. They then migrate upstream in late fall to early winter before spawning. Spawning occurs from mid-winter through July in water temperatures between 48°F and 68°F (Wang 1986) at times of high winter or spring runoff (Moyle et al. 1995). Eggs acquire adhesive properties following exposure to water and adhere to vegetation or other benthic substrates (Wang 1986). Fertilized eggs generally hatch in 3 to 5 days, and larvae begin feeding on plankton soon thereafter. Juvenile splittail inhabit shallow areas with abundant vegetation that are devoid of strong currents (Wang 1986) as they travel downstream from the spawning grounds to the Delta.

Mature splittail are generally found in the shallows of sloughs in edgewater habitat by emergent vegetation. They feed primarily on benthic invertebrates and aquatic insect larvae (Moyle 2002). Although they are tolerant of brackish water (Moyle 2002), splittail tend to move from areas of relatively high salinity to those characterized by fresh water (Moyle et al. 1995).

Delta Smelt

Delta smelt are listed as threatened under the ESA and CESA. Critical habitat is designated from the Delta into the Sacramento River. Estuarine rearing habitat for juvenile and adult delta smelt is typically found in the waters of the lower Delta and Suisun Bay where salinity is between 2 and 7 parts per thousand (ppt). Delta smelt tolerate 0 to 19 ppt salinity. They typically occupy open shallow waters but also occur in the main channel in the region where fresh and brackish water mix. The zone may be hydraulically conducive to their ability to maintain position and metabolic efficiency (Moyle 2002).

Adult delta smelt begin spawning migration into the upper Delta in December or January (Table 3.9-2). Migration may continue over several months. Spawning occurs between January and July, with peak spawning during April through mid-May (Moyle 2002) (Table 3.9-2). Spawning occurs along the channel edges in the upper Delta, including the Sacramento River above Rio Vista, Cache Slough, Lindsey Slough, and Barker Slough. Spawning has been observed in the Sacramento River up to Garcia Bend during drought conditions, possibly attributable to adult movement farther inland in response to saltwater intrusion (Wang and Brown 1993). Eggs are broadcast over the river bottom where they attach to firm substrate, woody material, and vegetation. Hatching takes approximately 9 to 13 days, and larvae begin feeding 4 to 5 days later. Newly hatched larvae contain a large oil globule and are semi-buoyant. Larval smelt feed on rotifers and other zooplankton. As their fins and swim bladder develop, they move higher into the water column. Larvae and juveniles gradually move downstream toward rearing habitat in the estuarine mixing zone (Wang 1986).

Green Sturgeon

NMFS has divided sturgeon into two DPSs: the southern and northern DPS. The northern DPS comprises sturgeon from the Eel River northward; the southern DPS comprises populations below the Eel, specifically the Sacramento River population (71 FR 17757). The southern DPS, which occurs in the study area, is federally listed as threatened (71 FR 17757, April 7, 2006). Green sturgeon are known to occur in the lower reaches of large rivers, including the Klamath, Eel, and Smith Rivers from the Delta northward (Moyle 2002). Green sturgeon also have been found in saltwater from Ensenada, Mexico, to the Bering Sea and Japan (Miller and Lea 1972). Adults of this species tend to be associated with marine environments more than the more common white sturgeon, although spawning populations have been identified in the Sacramento and Klamath Rivers (Beak Consultants 1993). Virtually all green sturgeon spawning occurs upstream of Hamilton City and as far upstream as Keswick Dam (Adams et al. 2002). Green sturgeon are thought to spawn upstream of the Red Bluff Diversion Dam following modifications to the operation of that facility (Adams et al. 2002). The preferred spawning substrate is thought to be large cobble, although the substrate type may range from clean sand to bedrock. Eggs are broadcast and fertilized in relatively fast-flowing water where depths typically exceed 10 feet (Moyle 2002). In the Sacramento River, green sturgeon presumably spawn at temperatures ranging from 46°F to 57°F (Beak Consultants 1993).

River Lamprey

River lamprey is a state species of special concern. River lamprey are relatively small (averaging 6.7 inches long) and highly predaceous (Moyle 2002). They are anadromous and will attack fish in both fresh and saltwater (Moyle 2002). A great deal of what is known about the species is based on populations in British Columbia. There, adults migrate from the Pacific Ocean into rivers and

streams in September and spawn in winter. Adults excavate a saucer-shaped depression in sand or gravel riffles where eggs are deposited. After spawning, the adults perish. Juvenile river lamprey, called ammocoetes, remain in backwaters for several years where they feed on algae and microorganisms (Moyle et al. 1986). The metamorphosis from juvenile to adult begins in July and is complete by the following April. From May through July, following completion of metamorphosis, river lamprey aggregate in the Delta before entering the ocean.

River lamprey is distributed in streams and rivers along the eastern Pacific Ocean from Juneau, Alaska, to San Francisco Bay. It may have its greatest abundance in the Sacramento and San Joaquin River systems, although it is not commonly observed in large numbers (Moyle et al. 1986).

Table 3.9-2. Life Stage Timing and Distribution of Selected Species Potentially Affected by the Proposed Program

Species/Life Stage	Distribution	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Winter-Run Chinook Salmon													
Adult migration and holding	S.F. Bay to Upper Sacramento River	■	■	■	■	■	■						
Juvenile rearing (natal stream)	Upper Sacramento River to S.F. Bay	■	■	■	■			■	■	■	■	■	■
Juvenile movement and rearing	Upper Sacramento River to S.F. Bay	■	■	■	■								
Spring-Run Chinook Salmon													
Adult migration	S.F. Bay to Upper Sacramento River and Tributaries			■	■	■	■	■					
Juvenile movement	Upper Sacramento River and Tributaries to S.F. Bay	■	■	■	■	■					■	■	■
Late Fall–Run Chinook Salmon													
Adult migration	S.F. Bay to Upper Sacramento River and Tributaries	■	■								■	■	■
Juvenile movement and rearing	Upper Sacramento River and Tributaries	■	■	■	■	■	■				■	■	■
Fall-Run Chinook Salmon													
Adult migration and holding	S.F. Bay to Upper Sacramento River and Tributaries							■	■	■	■	■	■
Juvenile movement	Upper Sacramento River and Tributaries to S.F. Bay	■	■	■	■	■	■						
Steelhead													
Adult migration	S.F. Bay to Upper Sacramento River and Tributaries	■	■	■						■	■	■	■
Juvenile and smolt movement	Upper Sacramento River and Tributaries to S.F. Bay	■	■	■	■	■	■				■	■	■

Species/Life Stage	Distribution	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Green Sturgeon													
Adult migration and holding	S.F. Bay to Upper Sacramento River		■	■	■	■	■						
Juvenile rearing (natal stream to estuary)	Upper Sacramento River to S.F. Bay	■	■	■	■	■	■	■	■	■	■	■	■
Juvenile movement and rearing	Upper Sacramento River to S.F. Bay					■	■	■	■				
Delta Smelt													
Adult migration	South Delta to North Delta and Lower Sacramento River	■	■	■									■
Spawning	Upper Delta to Lower Sacramento River	■	■	■	■	■	■	■					
River Lamprey													
Adult migration and spawning	Pacific Ocean to Sacramento River									■	■	■	■
Metamorphosis and movement	Sacramento River to Delta					■	■	■					

Sources: Wang and Brown 1993; U.S. Fish and Wildlife Service 1996; McEwan 2001; Moyle 2002; Hallock 1989; Beamesderfer et al. 2006.

Note: Primary occurrence included in the assessment of program effects.

3.9.2.2.4 Factors that Affect Abundance of Fish Species

Information relating abundance with environmental conditions is most available for listed species, especially Chinook salmon. The following section focuses on factors that have potentially affected the abundance of listed species in the Central Valley. Although not all species are discussed, factors affecting the listed species are assumed also to affect the abundance of other native and non-native species in similar fashion.

Spawning Habitat Area

Spawning habitat area may limit the production of juveniles and subsequent adult abundance of some species. Spawning habitat area for fall- and late fall–run Chinook salmon, which compose more than 90% of the Chinook salmon returning to the Central Valley streams, has been identified as limiting their population abundance. Existing spawning habitat area has not been identified as a limiting factor for the less-abundant winter-run and spring-run Chinook salmon (National Marine Fisheries Service 1996; U.S. Fish and Wildlife Service 1996), although habitat may be limiting in some streams (e.g., Butte Creek) during years of high adult abundance.

Delta smelt spawn in fresh water at low tide on aquatic, submerged, and inshore plants and over sandy and hard bottom substrates of sloughs and shallow edges of channels in the upper Delta and Sacramento River above Rio Vista (Wang 1986; Moyle 2002). Spawning habitat area has not been identified as a factor affecting delta smelt abundance (U.S. Fish and Wildlife Service 1996), but little is known about specific spawning areas and requirements in the Delta.

A lack of sufficient seasonally flooded vegetation may limit splittail spawning success (Young and Cech 1996; Sommer et al. 1997). Splittail spawn over flooded vegetation and debris on floodplains inundated by high flows from February to early July in the Sacramento River and San Joaquin River systems. The onset of spawning appears to be associated with rising water levels, increasing water temperature, and day length (Moyle 2002). The Sutter and Yolo Bypasses along the Sacramento River are important spawning habitat areas during high flow.

Rearing Habitat Area

Rearing habitat area may limit the production of juveniles and subsequent adult abundance of some species. USFWS (1996) has indicated rearing habitat area in Central Valley streams and rivers limits the abundance of juvenile fall-run and late fall–run Chinook salmon and juvenile steelhead. Rearing habitat for salmonids is defined by environmental conditions such as water temperature, dissolved oxygen (DO), turbidity, substrate, water velocity, water depth, and cover (Jackson 1992; Bjornn and Reiser 1991; Healey 1991). Chinook salmon also rear along the shallow vegetated edges of Delta channels (Grimaldo et al. 2000).

Environmental conditions and interactions among individuals, predators, competitors, and food sources determine habitat quantity and quality and the productivity of the stream (Bjornn and Reiser 1991). Everest and Chapman (1972) found juvenile Chinook salmon and steelhead of the same size using similar in-channel rearing area.

Rearing area varies with flow. High flow increases the area available to juvenile Chinook salmon because they extensively use submerged terrestrial vegetation on the channel edge and the floodplain. Deeper inundation provides more overhead cover and protection from avian and terrestrial predators than shallow water (Everest and Chapman in Jackson 1992). In broad, low-gradient rivers, change in flow can greatly increase or decrease the lateral area available to juvenile Chinook salmon, particularly in riffles and shallow glides (Jackson 1992).

Rearing habitat for larval and early juvenile delta smelt encompasses the lower reaches of the Sacramento River below Isleton and the San Joaquin River below Mossdale. Estuarine rearing by juveniles and adults occurs in the lower Delta and Suisun Bay. USFWS (1996) has indicated that loss of rearing habitat area would adversely affect the abundance of larval and juvenile delta smelt. The area and quality of estuarine rearing habitat are assumed to be dependent on the downstream location of approximately 2 ppt salinity (Moyle et al. 1992). The condition where 2 ppt salinity is located in the Delta is assumed to provide less habitat area and lower quality than the habitat provided by 2 ppt salinity located farther downstream in Suisun Bay. During years of average and high outflow, delta smelt may concentrate anywhere from the Sacramento River around Decker Island to Suisun Bay (Moyle 2002). This geographic distribution may not always be a function of outflow and 2 ppt isohaline position. Outflow and the position of the 2 ppt isohaline may account for only about 25% of the annual variation in abundance indices for delta smelt (California Department of Water Resources and Bureau of Reclamation 1994).

Rearing habitat has not been identified as a limiting factor in splittail population abundance, but as with spawning, a lack of sufficient seasonally flooded vegetation may be limiting population abundance and distribution (Young and Cech 1996). Rearing habitat for splittail encompasses the Delta, Suisun Bay, Suisun Marsh, the lower Napa River, the lower Petaluma River, and other parts of San Francisco Bay (Moyle 2002). In Suisun Marsh, splittail concentrate in the dead-end sloughs that have small streams feeding into them (Daniels and Moyle 1983; Moyle 2002). As splittail grow,

salinity tolerance increases (Young and Cech 1996). Splittail are able to tolerate salinity concentrations as high as 29 ppt and as low as 0 ppt (Moyle 2002).

Migration Habitat Conditions

The Sacramento River and the Delta provide a migration pathway between freshwater and ocean habitats for adult and juvenile steelhead and all runs of Chinook salmon.

Migration habitat conditions include streamflows that provide suitable water velocities and depths that provide successful passage. Flow in the Sacramento River and in the Delta provides the necessary depth, velocity, and water temperature; however, flow and environmental conditions in the Central Valley are not always at optimal levels (e.g., see discussion below for water temperature). In the Delta, the channel pathways affect migration of juvenile Chinook salmon. Juvenile Chinook salmon survival is lower for fish migrating through the central Delta (i.e., diverted into the Delta Cross Channel and Georgiana Slough) than for fish continuing down the Sacramento River (Newman and Rice 1997). Similarly, juvenile Chinook salmon entering the Delta from the San Joaquin River appear to have higher survival rates if they remain in the San Joaquin River channel instead of moving into Old River and the south Delta (Brandes and McLain 2001).

Larval and early juvenile delta smelt are transported by currents that flow downstream into the upper end of the mixing zone of the estuary where incoming saltwater mixes with outflowing fresh water (Moyle et al. 1992). Reduced flow may adversely affect transport of larvae and juveniles to rearing habitat.

Adult splittail gradually move upstream during the winter and spring months to spawn. Year-class success of splittail is positively correlated with wet years, high Delta outflow, and floodplain inundation (Sommer et al. 1997; Moyle 2002). Low flow impedes access to floodplain areas that support rearing and spawning.

Water Temperature

Fish species have different responses to water temperature conditions depending on their physiological adaptations. Salmonids in general have evolved under conditions in which water temperatures need to be relatively cool. Delta smelt and splittail can tolerate warmer temperatures. In addition to species-specific thresholds, different life stages have different water temperature requirements. Eggs and larval fish are the most sensitive to warm water temperature.

Unsuitable water temperatures for adult salmonids such as Chinook salmon and steelhead during upstream migration lead to delayed migration and the potential for lower reproduction rates. Elevated summer water temperatures in holding areas cause mortality of spring-run Chinook salmon (U.S. Fish and Wildlife Service 1996). Warm water temperature and low DO also increase egg and fry mortality. USFWS (1996) cited elevated water temperatures as limiting factors for fall- and late fall-run Chinook salmon.

Juvenile salmonid survival, growth, and vulnerability to disease are affected by water temperature. In addition, water temperature affects prey species abundance and predator occurrence and activity. Juvenile salmonids alter their behavior depending on water temperature, including movement to take advantage of local water temperature refugia (e.g., movement into stratified pools, shaded habitat, subsurface flow) and improve feeding efficiency (e.g., movement into riffles).

Water temperature in Central Valley rivers frequently exceeds the tolerance of Chinook salmon and steelhead life stages. For example, adult fall-run Chinook salmon have been observed to stop their upstream migration when water temperatures exceed 66°F (Hallock et al. 1970). For Chinook salmon eggs and larvae, survival during incubation is assumed to decline with increasing temperature between 54°F and 61°F (Myrick and Cech 2001; Seymour 1956 in Alderice and Velsen 1978). For juvenile Chinook salmon, survival is assumed to decline as temperature warms from 64°F to 75°F (Myrick and Cech 2001; Rich 1987). Relative to rearing, Chinook salmon require cooler temperatures to complete the parr-smolt transformation and maximize their saltwater survival. Successful smolt transformation is assumed to deteriorate at temperatures ranging from 63°F to 73°F (Marine 1997 in Myrick and Cech 2001; Baker et al. 1995).

For steelhead, successful adult migration and holding are assumed to deteriorate as water temperature warms between 52°F and 70°F. Adult steelhead appear to be much more sensitive to thermal extremes than are juveniles (National Marine Fisheries Service 1996; McCullough 1999). Conditions supporting steelhead spawning and incubation are assumed to deteriorate as temperature warms between 52°F and 59°F (Myrick and Cech 2001). Juvenile rearing success is assumed to deteriorate at water temperatures ranging from 63°F to 77°F (Raleigh et al. 1984; Myrick and Cech 2001). Relative to rearing, smolt transformation requires cooler temperatures, and successful transformation occurs at temperatures ranging from 43°F to 50°F. Juvenile steelhead, however, have been captured at Chipps Island in June and July at water temperatures exceeding 68°F (Nobriga and Cadrett 2001). Juvenile Chinook salmon have also been observed to migrate at water temperatures warmer than expected based on laboratory experimental results (Baker 1995).

Delta smelt and splittail populations are adapted to water temperature conditions in the Delta. Delta smelt may spawn at temperatures as high as 72°F (U.S. Fish and Wildlife Service 1996) and can rear and migrate at temperatures as warm as 82°F (Swanson and Cech 1995). Splittail may withstand temperatures as warm as 91°F but prefer temperatures between 66°F and 75°F (Young and Cech 1996).

Entrainment

All fish species are entrained to varying degrees by the SWP and CVP Delta export facilities and many other smaller diversions in the Delta and Central Valley rivers. Fish entrainment and subsequent mortality are highly variable among species and may be a function of the size of the diversion, the location of the diversion, the behavior of the fish (Swanson et al. 2004, 2005), and other factors, such as fish screens, the presence of predatory species, and water temperature. Diversions that divert relatively little water from the total channel and with low approach velocities are assumed to minimize stress and protect fish from entrainment.

Juvenile striped bass populations have steadily declined since the mid-1960s partially because of entrainment losses of eggs and young fish at water diversions (Foss and Miller 2001). The CVP and SWP fish facilities indicate entrainment of adult delta smelt during spawning migration from December through April (California Department of Water Resources and Bureau of Reclamation 1994). Juveniles are entrained primarily from April through June. Young-of-year splittail are entrained between April and August when fish are moving downstream into the estuary (Cech et al. 1979 as cited in Moyle 2002). Juvenile Chinook salmon are entrained in all months but primarily from November through June when juveniles are migrating downstream.

Although several studies documenting entrainment at small, unscreened Delta diversions are available, few address population-level effects or accurately estimate the total loss of fish at the

diversions studied (Moyle and Israel 2005). Some diversions may in fact entrain large numbers of individuals. However, many studies report capturing mostly larval or post-larval fish, with the majority of the catch being dominated by non-native species such as gobies, threadfin shad, and striped bass (Cook and Buffaloe 1998; Nobriga et al. 2004).

Contaminants

In the Sacramento and San Joaquin River basins, industrial and municipal discharge and agricultural runoff transport contaminants into rivers and streams that ultimately flow into the Delta. Principal pollutants in the Delta are agricultural chemicals and their derivatives (Herbold et al. 1992). Organophosphate insecticides, such as carbofuran, chlorpyrifos, and diazinon, are present throughout the Central Valley and dispersed in agricultural and urban runoff. The "first-flush" storm event or the "dormant spray" storm event is of most concern because of the higher concentration of contaminants in the runoff. In particular, diazinon and chlorpyrifos are applied to control wood-boring insects in dormant stone fruit orchards from December to February (Zamora et al. 2003). These contaminants enter rivers in winter runoff and enter the estuary in concentrations that can be toxic to invertebrates (CALFED Bay-Delta Program 2000). Unlike severe bioaccumulators such as organochlorine pesticides, organophosphate pesticides are typically metabolized by most invertebrates. However, some organophosphate pesticides do not bioaccumulate, and some do bioaccumulate. In particular, diazinon has a solubility of 68.9 milligrams per liter (mg/L) (at 68°F), but should not bioaccumulate in aquatic organisms (Zamora et al. 2003). Chlorpyrifos, on the other hand, is more persistent in the environment and tends to be hydrophobic to the water column. Chlorpyrifos has a lower solubility than diazinon (1.12 mg/L at 75°F) and has a significant potential to bioaccumulate in aquatic organisms (Zamora et al. 2003). Because some organophosphate may accumulate in living organisms, they may become toxic to fish species, especially those life stages that remain in the system year-round and spend considerable time there during the early stages of development, such as Chinook salmon, steelhead, splittail, green sturgeon, and delta smelt.

Mercury contamination from historical mining activities is extensive on both sides of the Central Valley and occurs primarily from widely scattered hydraulic mining debris along eastside tributaries and active abandoned mines and associated debris piles on the west side. These sources continue to deposit significant amounts of mercury into the Bay-Delta system. The Cosumnes River, Yolo Bypass, and Sacramento River are the primary ongoing sources of mercury contamination in the Bay-Delta. Mercury occurs in several forms, including pure elemental mercury and toxic methylmercury. Mercury is mobile in aquatic systems as aqueous mercury or when attached to suspended particulate matter. Methylmercury is a significant water quality concern because small amounts can bioaccumulate in fish to levels that are toxic to humans and wildlife. In the Delta, mercury concentrations in bluegill, Sacramento sucker, and largemouth bass have been found to exceed the human health standard of 0.5 part per million (ppm) by two to six times (Slotten 1991).

Other contaminants of particular concern in the Bay-Delta system include high concentrations of trace elements such as selenium, copper, cadmium, and chromium; however, their effects on higher trophic levels are poorly understood, in part as a result of the complex distribution of high concentrations in both time and space (Herbold et al. 1992). In general, it appears that the highest concentrations occur in areas where human activity adjacent to the bay is also the highest. Although these trace elements also occur naturally, concentrations of these trace elements have been found to be high enough to adversely affect the growth and reproduction of aquatic animals in laboratory experiments (Herbold et al. 1992).

Further discussion on water quality constituents of concern can be found in Section 3.3, Water Quality and Groundwater Resources.

Predation

Nonnative species cause substantial predation mortality on native species. Studies at Clifton Court Forebay estimated predator-related mortality of hatchery-reared fall-run Chinook salmon to be from about 60% to more than 95%. Although the predation contribution to mortality is uncertain, the estimated mortality suggests that striped bass and other predatory fish, primarily non-native, pose a threat to juvenile Chinook salmon moving downstream, especially where the stream channel has been altered from natural conditions. Turbulence from water passing over dams and other structures may disorient juvenile Chinook salmon and steelhead, increasing their vulnerability to predators. Predators such as striped bass, largemouth bass, and catfish also prey on delta smelt and splittail (U.S. Fish and Wildlife Service 1996).

Food

Food availability and type affect survival of fish species. Species such as threadfin shad and wakasagi may affect delta smelt survival through competition for food. Introduction of non-native food organisms also may have an effect on delta smelt and other species' survival. Non-native zooplankton species are more difficult for small smelt and striped bass to capture, increasing the likelihood of larval starvation (Moyle 2002). Splittail feed on opossum shrimp, which in turn feed on native copepods that have shown reduced abundance, potentially attributable to the introduction of non-native zooplankton and the Asiatic clam (*Potamorcorbula amurensis)*. In addition, flow affects the abundance of food in rivers, the Delta, and Suisun Bay. In general, higher flows result in higher productivity, including a higher input of nutrients from channel margins and floodplain inundation, and higher production when low salinity occurs in the shallows of Suisun Bay. Higher productivity increases the availability of prey organisms for delta smelt and other fish species.

3.9.3 Environmental Consequences

This section describes the effect analysis relating to fisheries for the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be adverse or significant. How this effect differs among reaches is discussed, if applicable. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) adverse effects accompany each effect discussion.

3.9.3.1 Assessment Methods

3.9.3.1.1 Prefield Investigation

To prepare for the field surveys and analysis of the potential effects of the proposed program on fish species, fisheries biologists reviewed existing resource information related to the study area to evaluate whether sensitive habitats and special-status fish species are known from or could occur in the study area. The information reviewed included the following sources:

- a USFWS list of endangered, threatened, and proposed species for the Sacramento West, Clarksburg, Liberty Island, and Rio Vista USGS 7.5-minute quadrangle and Sacramento and Yolo Counties (U.S. Fish and Wildlife Service 2009); and
- published and unpublished documents and reports pertaining to the study area.

3.9.3.1.2 Field Surveys

A reconnaissance-level survey of the study area was conducted by an ICF International fisheries biologist on October 26, 2007. During the survey, fish habitat was identified and evaluated for its ability to support special-status fish species.

3.9.3.2 Determination of Effects

For this analysis, an effect pertaining to special-status fish species and their habitats was considered adverse under NEPA or significant under CEQA if it would result in any of the following environmental effects, which are based on professional practice and CEQA Guidelines Appendix G (14 CCR 15000 *et seq.).*

Assessment species are selected based on listing under the ESA and/or CESA. An effect was considered adverse under NEPA and significant under CEQA if program actions would substantially reduce the abundance and distribution of the identified important fish species. Additionally, adverse effects/significant impacts may occur if the program alternatives would result in:

- substantial interference with the movement of any resident or migratory fish species;
- substantial long- or short-term loss of habitat quality or quantity;
- substantial adverse effects on rare or endangered species, candidate species, other special-status species, or habitat of the species; or
- substantial adverse effects on fish communities or species protected by applicable environmental plans and goals.

3.9.3.2.1 Effect Assumptions

The determination of significance requires that:

- environmental conditions are measurably changed by the program,
- the change in environmental conditions adversely affects a species or its habitat,
- the change in environmental conditions is permanent or ongoing or affects a substantial proportion of the species population, or
- species population abundance is likely reduced, including a short-term reduction.

Qualitative relationships between environmental conditions and life stage survival are the basis of the effect assessment. Cause-and-effect relationships are identified for assessment species, including the relationship between environmental conditions and habitat and the effects of changes in habitat on survival. Determination of significance requires a qualitative or quantitative assessment of population sensitivity to changes in survival of specific life stages.

3.9.3.2.2 Effect Mechanisms

The assessment of effects considers the occurrence and potential occurrence of species and life stages relative to the magnitude, timing, frequency, and duration of program activities. Species habitat attributes potentially affected by construction activities include rearing habitat area and migration habitat conditions. Short-term effects on fish species attributable to bank protection activities include water quality effects and noise and disturbance. Long-term effects on fish habitat include loss of aquatic vegetation and SRA cover. This evaluation of effects on special-status fish species was based on the analysis of the proposed levee treatments.

Short-term construction effects are evaluated qualitatively based on general knowledge of the physiological tolerances and behavioral responses of listed fish species to potential increases in turbidity and suspended sediment, noise, and contaminants.

3.9.3.3 Effects and Mitigation Measures

3.9.3.3.1 No Action Alternative

The No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee improvements to increase the level of protection. Current levee operations and maintenance activities would continue. No construction-related release of contaminants would occur, and no noise and disturbance to special-status fish species or construction-related loss of habitat for special-status fish species would occur. The current levee maintenance activities, including mowing and application of herbicides, would continue.

Without levee improvements, there is the continued risk of levee failure. Under these conditions, any of the deficiencies could cause portions of the levee system to fail, triggering widespread flooding and extensive damage. A catastrophic levee failure could result in the displacement of fish into flooded areas and the potential for stranding and mortality. In addition, adverse water quality effects could result from the release of hazardous materials during a flooding event, which could lead to stress and direct mortality or adversely affect migration, spawning and rearing habitat of fish species in the Sacramento River, Yolo Bypass, and the Delta. Emergency clean-up and earth-moving activities could also result in an increase in sediment and turbidity and the release of hazardous materials into the Sacramento River, the Delta and adjacent waterways that adversely affect migration, spawning or rearing habitat, or result in direct mortality of special status fish species. Depending on the magnitude of the flood, emergency clean-up activities could last for days, weeks, or even months. If a flood occurred in late winter, clean-up activities could last into the spring, a critical time for migration, movement and rearing of winter-run and spring-run Chinook salmon, steelhead, and green sturgeon. Given the unpredictable nature of emergency clean-up activities, is it likely that implementation of BMPs and measures to reduce effects on fish would not be possible. All of these effects would be considered significant. Furthermore, if levees along the Sacramento River were to collapse, important SRA habitat would be lost. Restoration of this critical habitat could require decades. All of these effects would be considered significant; however, given the uncertainty of the occurrence or magnitude of such an event, potential effects on fisheries cannot be quantified based on available information.

As discussed under the No Action Alternative in section 3.8, Vegetation and Wetlands, compliance with the vegetation-free zone as described in the USACE's Vegetation Guidance would be required with or without program implementation. Compliance with the vegetation guidance could result in

the removal of a substantial amount of vegetation, including riparian vegetation that supports SRA habitat. This would result in adverse impacts on fish and their habitats. However, given the uncertainties surrounding the potential for variances and implementation of the vegetation guidance, an estimation of effects is too speculative.

3.9.3.3.2 Flood and Recreation Program Alternatives

Effect FISH-1: Permanent Loss of Habitat, Including Shaded Riverine Aquatic Cover, for Special-Status Fish Species Resulting from Levee Vegetation Removal

All levee alternatives proposed under the WSLIP would follow USACE's policies regarding vegetation on levees, which forbid all woody vegetation on the crown, slopes, and within 15 feet of the waterside and landside levee toes. These zones would be maintained free of woody vegetation in perpetuity. Thus, the removal of a substantial amount of mature trees and vegetation from the banks of the Sacramento River may be required.

Permanent loss of the woody vegetation in compliance with USACE's policies would result in a substantial adverse effect on riparian habitat and potentially on SRA. The full extent of this effect is dependent on what portions of the existing levee would be officially deemed as the levee prism according to USACE. In some cases, the current levees are wider than the minimum requirements (or may become wider with the implementation of program alternatives such as an adjacent levee raise) and existing vegetation may fall outside of the vegetation- free zone. Moreover, dependent on site conditions, variances may be issued on a case-by-case basis that would allow vegetation to remain.

Because of the numerous ways that riparian vegetation influences the stream ecosystem, the effects of altering riparian vegetation are highly variable, ranging from increased sedimentation and warmer localized stream temperature to decreased food production and habitat complexity.

Removal of riparian vegetation would expose soils to erosive forces such as wind and rain, and could reduce overhead and instream cover (e.g., SRA cover). The removal of riparian vegetation, large woody debris, and aquatic vegetation directly affects the quantity and quality of cover for fish and aquatic invertebrates.

The loss of riparian vegetation that supports SRA cover as a result of vegetation removal and maintenance activities would result in greater fragmentation of existing SRA cover. Although some of the existing SRA cover currently is fragmented, further loss or fragmentation of SRA cover in the study area contributes to the increasing and cumulative degradation of the sensitive natural community in the Sacramento River. The study area reach of the Sacramento River is the only pathway for anadromous fish species to up-migrate from the Pacific Ocean (where they live their adult life stage) to upstream habitat where they spawn and rear, and conversely is the only out-migration pathway except in cases where individuals may use the Yolo Bypass as they are carried that way in high-water events. Loss of habitat in this reach would substantially impede the ability of anadromous fish (including special-status species) to complete their life cycle and reproduce.

Because of the unique value and relative scarcity of this cover type in the Sacramento and San Joaquin River systems, and because SRA cover is an essential component of fish habitat, removal of SRA cover would result in an adverse/significant effect on special-status fish such as juvenile Chinook salmon, steelhead, and Sacramento splittail. Implementation of Mitigation Measure FISH-MM-1 would reduce the effect on species in the area over time but because mature riparian habitat

cannot be replaced in the short term, this effect would still be an adverse effect on special-status fish species. In addition, dependent on the amount of the effect, implementation of Mitigation Measure FISH-MM-1 may reduce but not fully compensate for effects which would, therefore, be potentially adverse and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood alternatives are proposed for the reaches, this effect would occur at the following reaches: Sacramento River North and South Levees, Port North and South Levees, Yolo Bypass Levee, and the Sacramento Bypass Levee. SRA cover occurs in the Sacramento River North Levee and Sacramento River South Levee reaches. Other reaches have little or no existing SRA.

Effect FISH-1 Finding	With Mitigation
Significant	Potentially significant and unavoidable

Mitigation

Mitigation Measure FISH-MM-1: Compensate for Unavoidable Effects on Shaded Riverine Aquatic Cover

WSAFCA will compensate for effects on SRA cover. WSAFCA will apply the USFWS Habitat Evaluation Procedure (HEP) and Standard Assessment Program (SAM) to compensate for SRA cover, which includes shallow water, natural substrates, inundated vegetation during spring and winter, overhanging shade, and instream structure. The objective of this plan will be to protect existing high-value SRA cover, minimize unavoidable losses of SRA cover, and fully compensate for these losses through a combination of on- and off-site planting of native riparian vegetation in the study area. This plan will be implemented prior to or concurrently with program implementation and will include measurable objectives and performance measures, monitoring methods, and remedial actions to ensure full compensation of SRA cover and riparian losses. Direct and indirect effects resulting in permanent losses of SRA cover will be calculated by the HEP and SAM and compensated for accordingly. Elements of the plan will include limiting the extent of bank and channel armor to

the minimum necessary to meet the flood-protection objectives, preserving large riparian trees and large woody debris, and incorporating native woody vegetation in the rock slope protection proposed for the bank and low-flow shoreline of the Sacramento River. In addition, the compensation plan will include measures to compensate for and enhance SRA cover and riparian vegetation in the area adjacent to the Sacramento River. Potential compensation and enhancement measures include removing existing concrete or rock armor and/or planting banks and adjacent floodplains in areas where low-quality SRA and riparian values currently exist. These measures are expected to compensate (to the degree allowable) for program effects on SRA cover and riparian habitat and minimize potential effects on listed species to negligible levels.

Effect FISH-2: Loss of Habitat for Special-Status Fish Species as a Result of Construction

Program actions would result in the construction-related loss of riparian habitat. As discussed above under Effect FISH-1, riparian vegetation that supports SRA cover directly influences the quality of fish habitat, affecting cover, food, in-stream habitat complexity, stream bank stability, and temperature regulation. Large woody debris usually originates from riparian trees and provides habitat complexity in aquatic environments, an essential component of fish habitat.

Removal of SRA cover is considered an adverse/significant effect because of the unique value and relative scarcity of this cover type in the Sacramento and San Joaquin River systems, and because SRA cover is an essential component of fish habitat, especially for salmonids.

Removal of riparian vegetation, SRA, nearshore aquatic habitat, and floodplain habitat during construction would result in adverse effects on special-status fish such as juvenile Chinook salmon, steelhead, and Sacramento splittail. This effect is considered adverse. As discussed above under FISH-1 regarding the limitations caused by the vegetation-free zone, and dependent on the amount of the effect, implementation of FISH-MM-1 may reduce but not fully compensate for effects. Effect FISH-2 may, therefore, be potentially adverse and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood alternatives are proposed for the reaches, this effect would occur primarily at the following reaches: Sacramento River North and South Levees, Port North and South Levee, Yolo Bypass Levee, and the Sacramento Bypass Levee. SRA cover occurs in the Sacramento River North Levee and Sacramento River South Levee reaches. Other reaches have little or no existing SRA.

Effect FISH-2 Finding	With Mitigation
Significant	Less than significant to potentially significant and unavoidable

Mitigation

Mitigation Measure FISH-MM-1: Compensate for Unavoidable Effects on Shaded Riverine Aquatic Cover

Effect FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction

Program actions would require ground-disturbing activities that potentially cause erosion and soil disturbance, subsequently resulting in sediment transport and delivery to aquatic habitats. Increases in sedimentation and turbidity have been shown to affect fish physiology, behavior, and habitat. An increase in sedimentation and turbidity could occur in adjacent water bodies during earth-moving activities.

High concentrations of suspended sediment can have direct and indirect effects on fish. In general, larger fish tend to be more tolerant than smaller fish, while eggs and fry are the least tolerant. For salmonids, elevated turbidity levels have been observed to elicit several behavioral and physiological responses: gill flaring, coughing, avoidance, and increase in blood sugar levels. These responses indicate some levels of stress. Stress responses are generally higher with increasing turbidity and decreasing particle size. Turbidity may reach levels associated with avoidance behavior and reduced feeding success. Migrating adult salmonids have been reported to avoid high silt loads or cease migration when such loads are unavoidable (Cordon and Kelley 1961 in Bjornn and Reiser 1991).

Short-term increases in turbidity and suspended sediment may disrupt feeding activities or result in a temporary displacement of fish from preferred habitats. High concentrations of fine sediments reduce or eliminate much of the suitable substrate necessary for macroinvertebrate production, essentially limiting the food available to juvenile salmonids (Meehan 1991) and other species. Consequently, growth rates of fish could be reduced if suspended sediment and turbidity levels substantially exceed ambient levels for prolonged periods. In addition, substantial sediment input could adversely affect the migration of migratory species.

Disturbance of soil adjacent to the shoreline along levee toes and faces would temporarily increase turbidity above natural backgrounds in the immediate vicinity of these activities, potentially affecting fish species. It is expected that turbidity resulting from construction and maintenance activities would be intense in the vicinity of the activity but would rapidly attenuate with time and space.

The potential for adverse effects on fish from an increase in turbidity and sedimentation in adjacent waters is low for the following reasons.

- Environmental commitments, including an erosion and sediment control plan and SWPPP, would be developed and implemented before and during construction activities and would minimize the potential for increasing sedimentation and turbidity.
- Any increases in turbidity and sedimentation as a result of program activities would be temporary and limited to small portions of the overall water body.
- In-water construction would be limited to the typical construction season and during periods of low fish abundance, and outside the principal spawning and migration season. Typical construction season generally corresponds to the dry season, but WSLIP construction may occur outside the limits of the dry season, only as allowed by applicable permit conditions.
- Migratory and resident fish would likely move upstream, downstream, or laterally to an unaffected portion of the river in response to in-channel work and would therefore be unaffected by any increases in turbidity or sedimentation should they occur.
- If present, migratory species, such as adult and juvenile salmonids, would be expected to bypass channel reaches with elevated turbidity and sediment levels because a sufficient portion of the channel's width (i.e., zone of passage) would remain unaffected.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (full) ▪ Closure structure ▪ Jet grouting ▪ Sheet pile wall	▪ Slurry cutoff wall ▪ Slope flattening ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood alternatives are proposed for the reaches, this effect would primarily occur at the following reaches: Sacramento River North and South Levees, Yolo Bypass Levee, Sacramento Bypass Levee. To a lesser extent this effect would occur in the Port North and South Levee reaches and the DWSC East and West Levees because the DWSC and Barge Canal do not typically support habitat for special status fish species, but do provide habitat for resident species.

Effect FISH-3 Finding	With Mitigation
Less than significant	N/A

Effect FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction

Program actions may involve storage, use, or discharge of toxic and other harmful substances near the Sacramento River and other water bodies (or in areas that drain to these water bodies). Construction activities will involve the use of heavy equipment, cranes, compactors, and other construction equipment that use petroleum products (e.g., fuels, lubricants, hydraulic fluids, coolants). All of these materials may be toxic to fish and other aquatic organisms. An accidental spill or inadvertent discharge of these materials could affect the water quality of the river or water body and thereby affect fish or fish habitat.

Potential effects can range from avoidance of habitat in the vicinity of the construction activity to mortality, which could occur through exposure to lethal concentrations of contaminants or exposure to non-lethal levels that cause physiological stress and increased susceptibility to other sources of mortality (e.g., predation, disease).

Under the proposed program, accidental spills of construction materials such as concrete, fuels, oils, and coolants are not expected to occur. The program would adhere to environmental commitments to implement an SWPPP and an SPCCP, and a BSSCP, as described in Section 2.9 of Chapter 2, Alternatives, which would make any construction-related effects on water quality (and fish or fish habitat) not adverse/less than significant. If a spill were to occur, the SPCCP and Fran-Out Contingency Plan would be followed and Mitigation Measure WQ-MM-1, Implement Measures to Maintain Surface Water Quality and Groundwater Quality (as described in Section 3.3, Water Quality and Groundwater Resources), would be implemented to ensure water quality is returned to baseline conditions.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Sheet pile wall
	▪ Levee raise (in place)	▪ Slurry cutoff wall
	▪ Levee raise (adjacent)	▪ Slope flattening
	▪ Levee raise (full)	▪ Rock slope protection
	▪ Closure structure	▪ Setback levee
	▪ Jet grouting	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood alternatives are proposed for the reaches, this effect would occur at the following reaches: Sacramento River North and South Levees, Port North and South Levee, Yolo Bypass Levee, Sacramento Bypass Levee, and the DWSC East and West Levees.

Effect FISH-4 Finding	With Mitigation
Less than significant	N/A

Effect FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction

Construction-related short-term effects on fish would include effects related to noise, vibrations, artificial light, and other physical disturbances caused by heavy equipment operation. These types of physical disturbances can disrupt or delay normal activities, or cause injury or mortality. The potential magnitude of effects depends on a number of factors, including the type and intensity of the disturbance, proximity of the action to the water body, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities.

For most activities, if present, noise-related effects on fish would be limited to avoidance behavior in response to movements, noises, and shadows caused by construction personnel and equipment operating in or adjacent to the water body. However, construction-related noise levels are not expected to cause delay or adversely affect upstream or downstream migration of salmon, steelhead, and other migratory species for the reasons listed below.

- Construction would be limited to the typical construction season and during periods of low abundance, and outside the principal spawning and migration season. Typical construction season generally corresponds to the dry season, but WSLIP construction may occur outside the limits of the dry season, only as allowed by applicable permit conditions.
- Migratory and resident fish would likely move upstream, downstream, or laterally to an unaffected portion of the river in response noise or disturbance and would therefore be unaffected.
- If present, migratory species, such as adult and juvenile salmonids, would be expected to bypass channel reaches with noises or disturbances because a sufficient portion of the channel's width (i.e., zone of passage) would remain unaffected.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Sheet pile wall
	▪ Levee raise (in place)	▪ Slurry cutoff wall
	▪ Levee raise (adjacent)	▪ Slope flattening
	▪ Levee raise (full)	▪ Rock slope protection
	▪ Closure structure	▪ Setback levee
	▪ Jet grouting	▪ Vegetation removal
Recreation	▪ Riverside parks	▪ Developed water access

Affected Reaches

Although different flood alternatives are proposed for the reaches, this effect would occur at the following reaches: Sacramento River North and South Levees, Port North and South Levee, Yolo Bypass Levee, Sacramento Bypass Levee, and the DWSC East and West Levees.

Effect FISH-5 Finding	With Mitigation
Less than significant	N/A

Effect FISH-6: Loss of Fish, Including Special-Status Species, from Direct Injury as a Result of Construction

Program construction elements would involve using heavy equipment and other techniques that could result in direct injury, including mortality, to fish in the study area. In-water construction associated with levee degradation and reconstruction could directly kill or injure fish through direct contact with construction equipment. Placement of materials such as rock slope protection could directly kill or injure fish present during time of rock placement. Resident fish that use nearshore habitats are the most likely to be affected because these species would be most abundant in these habitats during time of construction (summer and early fall). In contrast, sensitive native species such as juvenile salmonids would be less likely to be affected because these species typically occur in the study area only seasonally (fall, winter and spring); consequently, their relative abundances at the time of construction would be low.

The number of fish potentially injured during construction would likely be small because of the reasons listed below.

- In-water construction would be limited to periods of low abundance, and outside the principal spawning and migration season, of sensitive native species (e.g., salmonids).
- Most fish would move upstream, downstream, or laterally to avoid the affected portion of the river in response to in-channel work.
- In-water construction activity would occur over a relatively short period (i.e., one construction season per project).
- The aquatic habitat that would be directly affected by construction equipment and placement of any materials represents a small percentage of the total stream habitat available, thereby limits the number of fish potentially exposed to directly injury and mortality.

Direct injury or mortality associated with direct contact with construction equipment and placement of materials (rock slope protection) during construction would result in effects that are less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (full) ▪ Setback levee	▪ Slope flattening ▪ Rock slope protection
Recreation	▪ Riverside parks	▪ Developed water access

Affected Reaches

Although different flood and recreation alternatives are proposed for the reaches, this effect would occur at the following reaches: Sacramento River North and South Levees, Port North and Port South Levees, and the DWSC East and West Levees.

Effect FISH-6 Finding	With Mitigation
Less than significant	N/A

Effect FISH-7: Increase in Sedimentation and Turbidity of Adjacent Water Bodies as a Result of Boating Activity

Boating activity associated with the new marinas may contribute to shoreline erosion and increase the concentration of suspended sediment and turbidity in the area, resulting in potential adverse effects on fish and other aquatic organisms. Wakes generated by passing boats can suspend fine sediments, increase turbidity, and disrupt the activities of juvenile fish in shallow waters along the shoreline. The effects of boat wakes and associated turbidity on listed fish species likely would be limited to behavioral effects.

Potential effects on listed fish species would be minimized by enforcing the existing No-Wake Zone, with its 5-mile-per-hour speed limit in the main river, and posting "no-wake" signs at the marinas and other high-visibility locations upstream and downstream of the marinas.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative
Recreation	▪ Developed water access ▪ Riverside parks

Affected Reaches

This effect would occur in the following reaches: Sacramento River North and South Levee reaches and the Port North and Port South Levee reaches. Each of these reaches includes riverside parks and developed water access. The Sacramento River North reach includes recreation elements proposed for the Washington Planning Area, Triangle Planning Area and Central Park (the Stone Lock Park component). The recreation elements for this reach include features such as marinas, docks, a water taxi, and floating restaurants. The Sacramento River South and Port North and South Levee reaches all encompass portions of the planned Central Park, which includes components such as a marina, improved boat ramps, and boat storage.

Effect FISH-7 Finding	With Mitigation
Less than significant	N/A

Effect FISH-8: Release of Contaminants to Adjacent Water Bodies as a Result of Boating Activity

Long-term operation of the marinas and the berthing of boats would increase the chance of spills or the leakage of gasoline, oil, and other contaminants into the Sacramento River. Operation and maintenance of the new marinas also would increase the amount of surface runoff from impervious surfaces (building roofs and parking areas), thereby increasing the potential for discharges of contaminants into the river.

Watercraft powered by carbureted and electronic injection two-stroke engines (manufactured before 1999) emits up to 25-30 percent of its fuel unburned into the water or atmosphere (California Department of Boating and Waterways 2010). Petroleum products have been shown to

be toxic to salmonids and other fish including lower organisms on the food chain such as the water flea *ceriodaphnia dubia* (National Marine Fisheries Service 2004). In general, the degree of toxicity depends on the concentration and duration of exposure. Direct effects of exposure to petroleum products include the physical coating of fish gills (reduction in oxygen uptake efficiency), disruption of the food absorption, and toxicological effects that can cause illness or death in fish. Indirect effects are less visible and may result in increased susceptibility to pathogens and parasites or adverse effects on prey organisms.

The construction of buildings, parking areas, roads, and walkways would increase impervious surfaces adjacent to the Sacramento River. These impervious surfaces would increase surface runoff by concentrating and redirecting stormwater during rain events and potentially increasing the concentrations of pollutants that enter the Sacramento River. These pollutants, which include heavy metals, hydrocarbons, nutrients, pesticides, polychlorinated biphenyls (PCBs), bromide, cyanide, sulphate, pathogenic bacteria, rubber, and sediment, threaten local water quality and can adversely affect the health of fish and other aquatic organisms.

The potential for adverse direct or indirect effects of toxic substances and other sources of pollution on listed fish species is generally low for small marinas as long as adequate measures are implemented to control runoff, prevent spills, and dispose of waste. Such measures include the SWPPP environmental commitment, which will help with construction-related erosion and the potential for chemicals to enter the waterway. Marinas and subject boaters would be required to follow environmental boating laws detailed by the California Coastal Commission. In addition, the California Clean Marina Program is an ongoing endeavor by a marina industry alliance, administered through the Marina Recreation Association, to provide environmentally clean facilities and protect the state's coastal and inland waters from pollution through compliance with management practices. Management practices include the following:

- petroleum containment;
- topside boat maintenance and cleaning;
- underwater boat hull cleaning;
- marina operations review and debris cleaning;
- boat sewage discharge containment;
- solid and liquid waste containment;
- fish waste containment;
- hazardous materials containment; and
- stormwater runoff control.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Recreation	▪ Developed water access	▪ Riverside parks

Affected Reaches

This effect would occur in the following reaches: Sacramento River North and South Levee reaches and the Port North and Port South Levee reaches. Each of these reaches includes riverside parks and developed water access. The Sacramento River North includes recreation elements proposed for the Washington Planning Area, Triangle Planning Area, and Central Park (the Stone Lock Park component). The recreation elements for this reach include features such as marinas, docks, a water taxi, and floating restaurants. The Sacramento River South and Port North and South Levee reaches all encompass portions of the planned Central Park, which includes components such as a marina, improved boat ramps, and boat storage.

Effect FISH-8 Finding	With Mitigation
Less than significant	N/A

Effect FISH-9: Disturbance of Special-Status Fish Species as a Result of Increased Boating Activity

Boating activity associated with the new marinas likely would increase ambient noise levels in the study area by a small, incremental amount. Little information is available to evaluate the effects of boating noise on fish. Exposure to boat engine noise has been found to cause temporary losses of hearing in the fathead minnow, according to a hearing specialist (Scholick and Yan 2002). The loss of hearing sensitivity may adversely affect the ability of fish to detect predators, locate prey, or sense their acoustic environment (Hastings and Popper 2005). Because ambient noise levels associated with recreational boat traffic generally fall within ranges that can affect fish behavior, increased boating activities associated with the new marinas may increase the frequency of disturbance or harassment of fish in the area. The potential for adverse behavioral effects is highest for juvenile fish that may respond in ways (e.g., leaving protective cover) that increase their vulnerability to predators.

Potential effects on listed fish species would be minimized by enforcing the existing No-Wake Zone, with its 5-mile-per-hour speed limit in the main river, and posting “no-wake” signs at the marinas and other high-visibility locations upstream and downstream of the marinas.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Recreation	▪ Developed water access	▪ Riverside parks

Affected Reaches

This effect would occur in the following reaches: Sacramento River North and South Levee reaches and the Port North and Port South Levee reaches. Each of these reaches includes riverside parks and developed water access. The Sacramento River North includes recreation elements proposed for the Washington Planning Area, Triangle Planning Area, and Central Park (the Stone Lock Park component). The recreation elements for this reach include features such as marinas, docks, a water

taxi, and floating restaurants. The Sacramento River South and Port North and South Levee reaches all encompass portions of the planned Central Park, which includes components such as a marina, improved boat ramps, and boat storage.

Effect FISH-9 Finding	With Mitigation
Less than significant	N/A

Effect FISH-10: Injury to or Mortality of Special-Status Fish Species as a Result of Pile Driving

Noise, vibrations, and other physical disturbances can harass fish, disrupt or delay normal activities, and cause injury or mortality. In fish, the hearing structures and swim bladder and surrounding tissues are particularly vulnerable to high-pressure sounds (Popper et al. 2006). The type and severity of effects depends on several factors, including the intensity and characteristics of the sound, the distance of the fish from the source, the timing of actions relative to the occurrence of sensitive life stages, and the frequency and duration of the noise-generating activities. The range of effects potentially includes behavioral effects, physiological stress, physical injury (including hearing loss), and mortality.

Given the proposed construction activities, the effects of noise on fish would be limited primarily to avoidance behavior in response to movements, vibrations, and noise caused by construction personnel and equipment operating in or adjacent to the Sacramento River. However, underwater pile-driving noise may reach levels that would be capable of injury or mortality of fish. Potential exposure of adult and juvenile salmonids to pile-driving sounds would be minimized by conducting all in-water pile-driving activities during a single construction season between July 1 and September 30 when the lowest numbers of Chinook salmon and steelhead are likely to be present in the area. Juvenile and adult green sturgeon may be present in the lower Sacramento River at this time.

There is no formal agreement on the thresholds that should be used to evaluate the potential for adverse behavioral effects from underwater pile-driving noise. NMFS and USFWS generally use 150 decibel (dB) root mean square as the threshold for behavioral effects for listed salmonids. Although no scientific support for this criterion is available, it is considered a general threshold for identifying potential behavioral responses (e.g., avoidance or alarm response) that could disrupt normal activity patterns or decrease the ability of fish to avoid predators.

Juvenile fish, including green sturgeon, that may be residing in the detection range of pile-driving sounds (approximately 1,100 yards) may respond in ways (e.g., leaving protective cover) that increase their vulnerability to predators.

The following measures are part of the proposed program and intended to reduce potential adverse effects on ESA-listed species and their habitat.

- All in-water construction activities will be limited to the period of June 1 through October 31 to avoid the primary migration periods of listed salmonids.
- In-water pile driving will be restricted to the period of July 1 through September 30 to avoid or minimize exposure of adults and juvenile salmonids to underwater pile-driving sounds.

- All pile driving will be conducted by a vibratory pile driver to minimize underwater sound levels during pile-driving operations.
- Pile driving will be conducted by barge to minimize disturbance of riparian habitat.
- Following construction, (where possible) native riparian vegetation will be planted on disturbed or exposed soils to control erosion and offset any losses of vegetation on the waterside slope of the levee

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Recreation	▪ Developed water access	▪ Riverside parks

Affected Reaches

This effect would occur in the following reaches: Sacramento River North and South Levee reaches and the Port North and Port South Levee reaches. Each of these reaches includes riverside parks and developed water access. The Sacramento River North includes recreation elements proposed for the Washington Planning Area, Triangle Planning Area, and Central Park (the Stone Lock Park component). The recreation elements for this reach include features such as marinas, docks, a water taxi, and floating restaurants. The Sacramento River South and Port North and South Levee reaches all encompass portions of the planned Central Park, which includes components such as a marina, improved boat ramps, and boat storage.

Effect FISH-10 Finding	With Mitigation
Less than significant	N/A

Effect FISH-11: Change in Predation on Native Fish Species Attributable to New Overwater and In-Water Structures

Overwater and in-water structures can alter underwater light conditions and provide potentially favorable holding conditions for adult fish, including species that prey on juvenile fishes. Permanent shading from the addition of floating docks and the permanent installation of piles and other structures in the Sacramento River could increase the number of predatory fish (e.g., striped bass, largemouth bass) holding in the study area and their ability to prey on juvenile salmonids and other fish.

The presence of floating docks, boats, and piles may result in localized increases in predation rates on juvenile salmon and steelhead relative to existing conditions. However, predation rates on juvenile salmon and steelhead at this location are likely low and will likely remain low under program conditions because most juveniles will continue to avoid the study area because of the lack of shallow-water habitat and suitable cover in the nearshore aquatic zone.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative
Recreation	• Developed water access

Affected Reaches

This effect would primarily occur within the Sacramento River North and South Levee reaches where developed water access components of the Recreation Program include construction of overwater and in-water structures such as marinas, docks, and floating restaurants. These recreation program alternatives could result in an increase in predation of native fish species such as juvenile salmonids. The Port North and South Levee reaches also include overwater and in-water structures within the Barge Canal; however, the likelihood of the presence of juvenile salmonids is limited because the passage is blocked from the mainstem of the Sacramento River by the barge locks. Therefore, the degree of this effect would be less in these reaches.

Effect FISH-11 Finding	With Mitigation
Less than significant	N/A

Effect FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish

Seasonal floodplain habitat may be adversely affected by program construction activities. Floodplain habitat is used by juvenile Chinook salmon for rearing and by Sacramento splittail for spawning and rearing. Studies (Sommer et al. 2001, 2005) conducted at the Yolo Bypass indicate that seasonal floodplain habitat provides substantially better rearing conditions than main channel habitat because of increased food production and reduced predation and competition from alien species (Jones & Stokes 2007). Green sturgeon and delta smelt may use floodplain habitat during migration. Effects on floodplain habitat would be temporary and primarily related to construction activities. Post-construction, any disturbed areas would be hydroseeded to provide reestablishment of wetland vegetation. Direct effects on fish would not be adverse because construction would be limited to the typical construction season and outside the principal spawning and migration season. Typical construction season generally corresponds to the dry season, but WSLIP construction may occur outside the limits of the dry season, only as allowed by applicable permit conditions.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Sheet pile wall ▪ Slurry cutoff wall	▪ Slope flattening ▪ Closure structure

Affected Reaches

This effect would occur in the Yolo Bypass and the Sacramento Bypass reaches.

Effect FISH-12 Finding	With Mitigation
Less than significant	N/A

Section 3.10
Wildlife

3.10.1 Introduction

This section describes the regulatory and environmental setting for wildlife resources, effects on wildlife resources that would result from the proposed program, and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed and briefly described below.

- CNDDB records search of the Sacramento West, Clarksburg, Liberty Island, and Rio Vista USGS 7.5-minute quadrangles and the nine quads surrounding each (California Natural Diversity Database 2009)
- USFWS list of endangered, threatened, and proposed species for the Sacramento West, Clarksburg, Saxon, Liberty Island, and Rio Vista USGS 7.5-minute quadrangle and Sacramento, Yolo, and Solano Counties (U.S. Fish and Wildlife Service 2009)
- Vegetation data from the Yolo Natural Heritage Program (Yolo Natural Heritage Program 2009)
- Aerial photographs of the program study area
- *City of West Sacramento General Plan 2004* (City of West Sacramento 2004)
- *Yolo County General Plan* (Yolo County 2002)
- *Solano County General Plan* (Solano County 2008)
- Published and unpublished reports
- ICF International file information

An ICF International biologist conducted prefield investigations and reconnaissance-level field surveys in the study area, as described in the Environmental Consequences section below. This information was used to develop lists of special-status wildlife species that could be present in the study area. Special-status species with potential to occur in the study area are discussed in the Environmental Setting section.

3.10.2 Affected Environment

3.10.2.1 Regulatory Setting

3.10.2.1.1 Federal

Federal Endangered Species Act

The Federal ESA of 1973 and subsequent amendments provide for the conservation of listed endangered or threatened species or candidates for listing and the ecosystems on which they

depend. USFWS has jurisdiction over federally listed plants, wildlife, and resident fish and NMFS has jurisdiction over anadromous fish and marine fish and mammals.

Section 7: ESA Authorization Process for Federal Actions

Section 7 of the ESA provides a means for authorizing take of threatened and endangered species by Federal agencies. It applies to actions that are conducted, permitted, or funded by a Federal agency. Under ESA Section 7, the lead Federal agency conducting, funding, or permitting an action must consult with USFWS or NMFS, as appropriate, to ensure that the proposed action will not jeopardize the continued existence of an endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed action may affect a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment (BA) evaluating the nature and severity of the expected effect. In response, USFWS or NMFS issues a biological opinion (BO), with a determination that the proposed action either:

- may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or
- will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by USFWS or NMFS may stipulate discretionary "reasonable and prudent" conservation measures. If it is determined the proposed program would not jeopardize the continued existence of a listed species, USFWS or NMFS would issue an incidental take statement to authorize the proposed activity.

Section 9: ESA Prohibitions

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered. *Take*, as defined by ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the species, including significant habitat modification." Take of threatened species also is prohibited under Section 9 unless otherwise authorized by Federal regulations.[1] Additionally, Section 9 prohibits removing, cutting, and maliciously damaging or destroying federally listed plants on sites under Federal jurisdiction.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes hunting seasons and capture limits for game species and protects migratory birds, their occupied nests, and their eggs (16 USC 703, 50 CFR 21, 50 CFR 10).

Executive Order 13186 (January 10, 2001) directs each Federal agency taking actions that have or may have a negative effect on migratory bird populations to work with USFWS to develop a

[1] In some cases, exceptions may be made for threatened species under ESA Section 4[d]; in such cases, USFWS or NMFS issues a "4[d] rule" describing protections for the threatened species and specifying the circumstances under which take is allowed.

memorandum of understanding (MOU) that will promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities:

- avoid and minimize, to the extent practicable, adverse effects on migratory bird resources when conducting agency actions;
- restore and enhance migratory bird habitats, as practicable; and
- prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The executive order is designed to assist Federal agencies in their efforts to comply with the MBTA, and does not constitute any legal authorization to take migratory birds.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act, as amended in1946, requires consultation with USFWS and the state fish and wildlife agencies where the waters of any stream or other body of water are proposed, authorized, permitted, or licensed to be impounded, diverted, or otherwise controlled or modified under a Federal permit or license. Consultation is undertaken for the purpose of preventing loss of and damage to wildlife resources.

3.10.2.1.2 State

California Endangered Species Act

California implemented the CESA in 1984. The act prohibits the take of listed endangered and threatened species. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. DFG administers the act and authorizes take through Section 2081 agreements (except for species designated as fully protected).

California Fish and Game Code

Section 1602 of the California Fish and Game Code (CFGC) requires project proponents to notify DFG before any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, DFG is required to propose reasonable changes to the project to protect the resources. These modifications are formalized in a streambed alteration agreement that becomes part of the plans, specifications, and bid documents for the project.

The CFGC provides protection from take for a variety of species, referred to as fully protected species. CFGC 5050 lists protected amphibians and reptiles. CFGC 5515 prohibits take of fully protected fish species. CFGC 3511 prohibits take of fully protected bird species. Fully protected mammals are protected under CFGC 4700. The CFGC defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

CFGC 3503 prohibits the killing of birds or the destruction of bird nests. CFGC 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Many bird species could potentially nest in the study area or vicinity. These nests would be protected under these sections of the CFGC.

3.10.2.1.3 Local

City of West Sacramento General Plan

In 1990, the City adopted the *City of West Sacramento General Plan*. The general plan was last revised and adopted in December 8, 2004. The general plan outlines goals and policies related to natural resources within the study area. The following objectives, policies, and implementation procedures are relevant to the study area:

Objective: To protect native vegetation and wildlife communities and habitat in West Sacramento

Policies

1. The City shall encourage and support development projects and programs that enhance public appreciation and awareness of the natural environment.
2. The City shall support state and federal policies for preservation and enhancement of riparian and wetland habitats by incorporating, as deemed appropriate, the findings and recommendations of *Sacramento Greenway Plan*, DFG, and USFWS into site-specific development proposals.
3. The City shall require site-specific surveys to identify significant wildlife habitat and vegetation resources for development projects locate in or near riparian or wetland areas.
4. The City shall support mitigation measures which provide for no net loss of riparian or wetland habitat acreage and value by regulating development in and near these habitats and promoting projects that avoid sensitive areas. Where habitat loss is unavoidable, the City shall seek replacement on at least a 1:1 basis. Replacement entails creating habitat that is similar in extent and ecological value to that displaced by the project. The replacement habitat should consist of locally occurring, native species and shall be located as close as possible to the project site or be part of a larger replacement habitat project.
5. To minimize disturbance to wildlife, the City shall require the provisions and maintenance of an adequate setback between significant wetland habitat and adjacent development. The buffer shall be landscaped with native or compatible introduced ornamental vegetation and may be used for passive recreation purposes.
6. The City shall encourage the maintenance of marsh and riparian vegetation along irrigation/drainage canals and along the Deep Water Ship Channel by encouraging that routine maintenance and clearing disturb only one bank per year and maintain the fringes of marsh vegetation.
7. The City shall seek to minimize the loss and degradation of wetland and riparian habitats at the following sites: Lake Washington and associated wetlands; Bee Lakes and associated riparian woodlands; riparian woodlands along the Sacramento River north of the I Street Bridge and south of the barge canal; and riparian woodlands along the Deep Water Ship Channel and the Yolo Bypass.
8. The City shall seek a cooperative effort with other jurisdictions; the State, and the federal government to conserve habitat. The goal of this effort shall be to preserve and enhance habitat values in appropriate large areas while allowing the orderly development within the incorporated areas of Yolo County. In the event a multi-jurisdictional effort is unsuccessful, the City shall adopt a conservation ordinance or plan that identifies specific habitats and sites where

development could diminish or eliminate significant biological habitat and protects them from the adverse effects of excavating, grading, filling, dredging, removing vegetation, landscaping with exotic species, and other incompatible uses and activities. In event protection is not possible, full mitigation shall be required.

9. The City shall seek to preserve populations of rare, threatened, and endangered wildlife or plant species.
10. The City shall not approve project that would cause unmitigatible impacts on rare, threatened, or endangered wildlife or plant species.
11. The City shall implement measures to ensure that development in the city does not adversely affect fishery resources in the Sacramento River, Deep Water Ship Channel, and Lake Washington.
12. Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize impacts on sensitive wildlife habitat or riparian vegetation.
13. The City shall promote the use of native plants, especially valley oaks, for landscaping roadsides, parks, and private properties. In particular, native plants shall be used along the Sacramento River and in areas adjacent to riparian and wetland habitats.

Yolo County General Plan

The *Yolo County General Plan* was adopted in 1983. The objective of the general plan is to provide guidance for the development of Yolo County. The general plan promotes the preservation of farm land and open spaces to minimize the area of urbanization. The Open Space and Recreation Element of the general plan was updated in 2002. The following goals, objectives, and policies are relevant to wildlife resources in the study area:

Goals and Supporting Objectives

- OG-1: Preserve open space lands utilizing a variety of land use controls and regulations.
    - OO-1: Creation and maintenance of regulatory framework that places a high priority on preservation of public and private open space lands.
- OG-2: Preserve agricultural land as the principal component of the local open space program.
    - OO-2: Maintenance of Urban Boundaries to direct urban growth into existing towns and cities to protect open space and agricultural lands.
- OG-3: Ensure a harmonious relationship between open space users and agriculture.
    - OO-3: Avoidance of conflicts with agricultural activities.
    - OO-4: Clearly demarcated boundaries between public open space and private agricultural lands.
- OG-4: Protect and manage local water resources.
    - OO-5: Provision for open space corridors within existing and future development.
- OG-5: Preserve and enhance existing biological resources.
    - OO-6: No net loss of wetland and/or riparian habitat.

- OO-7: Maintenance of unique or sensitive plant or animal habitat.

- OG-8: Create a continuous open space corridor along Lower Cache Creek and provide expanded public access to the Yolo Bypass, Lower Putah Creek, Willow Slough, the Sacramento River, and the Blue Ridge Mountains.
  - OO-10: Development of partnerships with local stakeholder watershed organizations to expand existing public open space along Cache Creek, Lower Putah Creek, the Sacramento River and within the Yolo Bypass.

Policies

- **OP-4:** The County shall encourage and support coordinated efforts by State and federal agencies, cities, special districts, and non-profit and conservation organizations to protect lands containing open space resources.
- **OP-5:** The County shall utilize the CEQA process to identify significant impacts to open space and shall require new development to implement county-implemented mitigation measures that minimize such impacts.
- **OP-7:** Development shall be directed away from naturally occurring riparian areas and wetlands.
- **OP-8:** Open space buffers shall be utilized to separate incompatible uses from areas of unique biological or agricultural importance.
- **OP-18:** The County, in conjunction with cities in Yolo County, shall endeavor to adopt a Natural Communities Conservation Plan that protects wildlife resources, open space, and agricultural production.

Solano County General Plan

The *Solano County General Plan* was adopted by the Board of Supervisors on August 5, 2008. The general plan contains a resources element that strives to ensure conservation, preservation, and enhancement of natural, cultural, and open space resources to ensure a high quality of life for current and future county residents. The resources chapter of the general plan identifies the following goals, policies, and implementation measures associated with natural (biological) resources that will be used by Solano County in day-to-day decision making to protect these resources.

General Resource Goals

The goals and accompanying policies describe outcomes consistent with the following strategic directions of the general plan:

- preserving of the county's valued natural, cultural, and scenic resources;
- enhancing and restoring the natural environment and the county's diverse landscapes; and
- ensuring sustainable provision of energy, water, and mineral resources.

General Resource Policies

- **RS.G-1:** Manage and preserve the diverse land, water, and air resources of the county for the use and enrichment of the lives of present and future generations.

- **RS.G-2:** Ensure continued presence and viability of the county's various natural resources.
- **RS.G-3:** Repair environmental degradation that has occurred, and seek an optimum balance between the economic and social benefits of the county's natural resources.
- **RS.G-4:** Preserve, conserve, and enhance valuable open space lands that provide wildlife habitat; conserve natural and visual resources; convey cultural identity; and improve public safety.
- **RS.G-5:** Ensure availability of affordable energy supplies and require efficiency and conservation measures to minimize energy consumption.
- **RS.G-6:** Preserve the visual character and identity of communities by maintaining open space areas between them.
- **RS.G-7:** Ensure provision of an adequate, competitively priced and sustainable water supply and associated infrastructure to serve the needs of existing and future water users.
- **RS.G-8:** Achieve ongoing coordination between land use and water supply planning.
- **RS.G-9:** Protect, monitor, restore and enhance the quality of surface and groundwater resources to meet the needs of all beneficial uses.
- **RS.G-10:** Foster sound management of the land and water resources in Solano County's watersheds to minimize erosion and protect water quality using best management practices and protect downstream waterways and wetlands.

Biological Resource Policies

- **RS.P-1:** Protect and enhance the county's natural habitats and diverse plant and animal communities, particularly occurrences of special-status species, wetlands, sensitive natural communities, and habitat connections.
- **RS.P-2:** Manage the habitat found in natural areas and ensure its ecological health and ability to sustain diverse flora and fauna.
- **RS.P-3:** Focus conservation and protection efforts on high-priority habitat areas.
- **RS.P-4:** Together with property owners and federal and state agencies, identify feasible and economically viable methods of protecting and enhancing natural habitats and biological resources.
- **RS.P-5:** Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations. Preserve contiguous habitat areas to increase habitat value and to lower land management costs.
- **RS.P-6:** Protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way.

3.10.2.2 Environmental Setting

This section discusses the existing conditions related to wildlife resources in the study area.

3.10.2.2.1 Study Area

For the purposes of this program-level analysis, the study area for wildlife consists of the levees listed below plus an approximate 500-foot-wide landside buffer. The study area occurs in West Sacramento within the counties of Yolo and Solano.

The study area occurs along the reaches of the following levees:

- Sacramento Bypass Levee
- Sacramento River North Levee
- Yolo Bypass Levee
- Port North Levee
- Port South Levee
- DWSC West Levee
- DWSC East Levee
- Sacramento River South Levee
- South Cross Levee

The approximate elevations in the study area range from 10 to 35 feet above mean sea level.

3.10.2.2.2 Prefield Investigation

To prepare for the field surveys and analysis of the potential effects of the proposed program on wildlife species, wildlife biologists reviewed existing resource information related to the study area to evaluate whether sensitive habitats and special-status wildlife species are known from or could occur in the study area. The information reviewed included the following sources:

- a CNDDB records search of the Sacramento West, Clarksburg, Liberty Island, and Rio Vista USGS 7.5-minute quadrangles and the nine quads surrounding each (California Natural Diversity Database 2009);
- a USFWS list of endangered, threatened, and proposed species for the Sacramento West, Clarksburg, Liberty Island, and Rio Vista USGS 7.5-minute quadrangle and Sacramento and Yolo Counties (U.S. Fish and Wildlife Service 2009); and
- published and unpublished documents and reports pertaining to the study area.

3.10.2.2.3 Field Surveys

A reconnaissance-level survey of the study area was conducted by ICF International wildlife biologists on November 29, 2007, and on December 18 and 19, 2008; and January 9, 2009. During all surveys, wildlife habitat uses associated with land cover types were identified and habitats were evaluated for their ability to support special-status wildlife species.

A list of wildlife species observed in the study area is provided in Table 3.10-1.

Table 3.10-1. Wildlife Species Observed in the Study Area

Common Name	Scientific Name
Birds	
Acorn woodpecker	*Melanerpes formicivorus*
American coot	*Fulica americana*
American crow	*Corvus brachyrhynchos*
American goldfinch	*Carduelis tristis*
American kestrel	*Falco sparverius*
American white pelican	*Pelecanus erythrorhynchos*
Belted kingfisher	*Megaceryle alcyon*
Black-crowned night heron	*Nycticorax nycticorax*
Black phoebe	*Sayornis nigricans*
Brewer's blackbird	*Euphagus cyanocephalus*
Bufflehead	*Bucephala albeola*
Bushtit	*Psaltriparus minimus*
California towhee	*Pipilo crissalis*
Canada goose	*Branta canadensis*
Dark-eyed junco	*Junco hyemalis*
Double-crested cormorant	*Phalacrocorax auritus*
Eared grebe	*Podiceps nigricollis*
European starling	*Sturnus vulgaris*
Golden-crowned sparrow	*Zonotrichia atricapilla*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Green heron	*Butorides virescens*
Gull sp.	*Larus* sp.
House wren	*Troglodytes aedon*
Killdeer	*Charadrius vociferus*
Mallard	*Anas platyrhynchos*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes auratus*
Northern harrier	*Circus cyaneus*
Red-tailed hawk	*Buteo jamaicensis*
Red-shoulder hawk	*Buteo lineatus*
Red-winged blackbird	*Agelaius phoeniceus*
Rock dove	*Columba livia*
Ruddy duck	*Oxyura jamaicensis*
Say's phoebe	*Sayornis saya*
Snowy egret	*Egretta thula*
Spotted towhee	*Pipilo erythrophthalmus*
Turkey vulture	*Cathartes aura*
Western meadow lark	*Sturnella neglecta*
Western scrub jay	*Aphelocoma californica*

Common Name	Scientific Name
White-crowned sparrow	*Zonotrichia leucophrys*
White-tailed kite	*Elanus leucurus*
Yellow-billed magpie	*Pica nuttalli*
Yellow-rumped warbler	*Dendroica coronata*
Mammals	
Black-tailed jack rabbit	*Lepus californicus*

3.10.2.2.4 Wildlife Habitat—Land Cover Type Associations

According to Yolo County overview vegetation map data (Yolo Natural Heritage Program 2009), the following land cover types occur in the study area: perennial aquatic (open water), emergent wetland, valley foothill riparian, woodlands and forest, grasslands and prairies, agricultural lands, and unvegetated, vacant, or developed lands. Each of the seven land cover types is discussed below and shown in Figure 3.8-1, in Section 3.8, Vegetation and Wetlands. These land cover types include jurisdictional wetlands and other waters of the United States and sensitive natural communities (foothill riparian forest and emergent wetland). The artificial land cover types consist of agricultural lands and developed lands.

This section summarizes the land cover types identified in the study area, describes the relationship between land cover types and wildlife habitats, and identifies common and special-status wildlife species associated with each habitat type. Although land cover types emphasize floristic composition, structure, and other physical attributes, each land cover type provides a specific function and value for wildlife species. In some instances, two or more land cover types may provide similar functions and values for wildlife (e.g., valley foothill riparian and woodlands and forest).

Perennial Aquatic

Within the study area, open water areas occur in the Sacramento River, DWSC, permanent ponds, and irrigation canals. Open water provides breeding, foraging, and migration habitat for numerous wildlife species. Mammal species commonly known to use perennial aquatic open water habitats include river otter (*Lontra canadensis*), which uses these areas for foraging and escape cover, and muskrat (*Ondatra zibethicus*), which may use deepwater areas as migration corridors between suitable foraging areas. Open water areas also provide essential foraging habitat for wading birds including great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*); numerous waterfowl species including mallard (*Anas platyrhynchos*), ruddy duck (*Oxyura jamaicensis*), and bufflehead (*Bucephala albeola*); other water birds including eared grebe (*Podiceps nigricollis*), double-crested cormorants (*Phalacrocorax auritus*), and American white pelicans (*Pelecanus erythrorhynchos*); and land birds including black phoebe (*Sayornis nigricans*) and belted kingfisher (*Megaceryle alcyon*). These areas also provide rearing habitat, escape cover, and foraging habitat for reptiles and amphibians including western pond turtle (*Actinemys marmorata*), common garter snake (*Thamnophis sirtalis*), giant garter snake (*Thamnophis gigas*), bullfrog (*Rana catesbeiana*), Pacific tree frog (*Hyla regilla*), and western toad (*Bufo boreas*). The vegetated areas below the OHWM provide nesting habitat for numerous songbirds, including red-winged blackbird (*Agelaius phoeniceus*) and marsh wren (*Cistothorus palustris*), and wading birds such as Virginia rail (*Rallus limicola*).

Emergent Wetland

Although emergent wetland does not occur in large continuous patches within the study area, this habitat type is designated as a sensitive natural community by DFG and provides important wildlife habitat value. This land cover type provides nesting and foraging habitat for several songbirds, including red-winged blackbird, tricolored blackbird (*Agelaius tricolor*), and marsh wren; foraging and nesting habitat for northern harrier (*Circus cyaneus*) and Virginia rail; foraging and cover habitat for the reptiles and amphibians mentioned above; and potential nesting habitat for western pond turtle.

Valley Foothill Riparian

Riparian habitats are considered to be among the most productive wildlife habitats in California and typically support the most diverse wildlife habitats. In addition to providing important nesting and foraging habitat, riparian habitats function as wildlife movement corridors. Riparian habitat is designated by DFG as sensitive natural and provides high value to wildlife.

Riparian forest habitat along the Sacramento River has a dominant overstory of valley oak (*Quercus lobata*) with Fremont cottonwood (*Populus freemontii*), California sycamore (*Platanus racemosa*, and various willow species (*Salix* sp.). Depending on the location, the understory may consist of dense shrubs including blue elderberry (*Sambucus mexicana*) and Himalayan blackberry (*Rubus discolor*), or grass-dominated vegetation.

Overstory trees may be used for nesting and roosting by numerous raptors, including Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*) and the herons and egrets mentioned as foraging in open water areas. Overstory trees also provide suitable habitat for song birds such as Bullock's oriole (*Icterus bullockii*), yellow-rumped warbler (*Dendroica coronata*), tree swallow (*Tachycineta bicolor*), and western scrub jay (*Aphelocoma californica*). Riparian forest also provides important foraging habitat for resident, migratory, and wintering songbirds. The understory of riparian woodlands provide habitat for mammals, including various species rodents, raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Areas containing large, dense shrubby vegetation dominated by willow or blackberry may support tricolored blackbird. Riparian forests also provide cover and foraging habitat for reptiles and amphibians, such as terrestrial garter snake (*Thamnophis elegans*), gopher snake (*Pituophis catenifer*), Pacific tree frog, and western toad. Suitable areas in the understory may also be used as nesting habitat for western pond turtles.

Woodlands and Forest

Small patches of woodland and forest occur in the study area along the Sacramento River outside of the riparian forest areas. These areas are dominated by valley oak and provide similar wildlife habitat uses as the valley foothill riparian forest. Wildlife species that use valley foothill riparian forest typically use woodlands and forest areas. Additionally, yellow-billed magpie (*Pica nuttalli*), acorn woodpecker (*Melanerpes formicivorus*), and northern flicker (*Colaptes auratus*) nest and forage in these habitats. Reptiles including gopher snake (*Pituophis catenifer*) and California king snake (*Lampropeltis getulus californiae*) also frequent these habitats.

Grasslands and Prairies

Areas mapped as grasslands and prairies in the study area are dominated by non-native annual grasses, non-native ruderal vegetation, and may support stands of noxious weeds. Grassland generally occurs in disturbed areas, such as levee faces and edges of agricultural fields and roads; the species in this land cover type are generally weedy to invasive. The largest area of non-native annual grassland occurs near the DWSC East and West and Port South Levees, but grasslands are generally scattered throughout the study area.

Annual grasslands provide nesting and foraging habitat for several species of songbirds, including savanna sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), and western meadowlark (*Sturnella neglecta*); and foraging habitat for several species of raptors including red-tailed hawk, white-tailed kite, northern harrier, great-horned owl, and Swainson's hawk. California ground squirrels commonly occur in annual grassland habitat. Their burrows provide important nesting habitat for western burrowing owls (*Athene cunicularia hypugea*). Reptiles found in these habitats include California kingsnake, gopher snake, and western rattlesnake (*Crotalus viridis*). Additionally, annual grassland areas surrounding levees and those adjacent to aquatic habitat may also provide potential winter hibercula for giant garter snake.

Agricultural Lands

Within the study area, agricultural lands include pasture, grain and hay fields, deciduous orchard (i.e., nuts, fruits), irrigated hay field, and irrigated row and field crops. General farming practices result in monotypic stands of vegetation for the growing season and bare ground in the fall and winter. Irrigation ditches are a part of most of the agricultural fields in the study area. Because the habitat provided by irrigation ditches is different from that of agricultural fields, it is discussed under the open water areas section above.

Agricultural lands provide foraging habitat for many wildlife species that occur in the study area. The value of agricultural lands for wildlife species depends on the crop type and typically varies by season and year, depending on the crop cycle and on the vegetative cover present at the site.

Row and field agricultural lands can provide high value foraging habitat for numerous resident and wintering raptors (particularly Swainson's hawk), songbirds, shorebirds, and wading birds. Agricultural lands also provide foraging habitat for rodents including deer mouse (*Peromyscus maniculatus*) and California meadow vole (*Microtus californicus*); other mammals including coyote (*Canis latrans*), raccoon, Virginia opossum; and reptiles including gopher snake and terrestrial garter snake.

Orchard crops typically provide less value to wildlife but may be used for nesting or foraging by American crow (*Corvus brachyrhynchos*), yellow-billed magpie, Brewer's blackbird (*Euphagus cyanocephalus*), brown-headed cowbird (*Molothrus ater*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), and rock dove (*Columba livia*).

Developed Lands

Developed lands mapped in the study area include areas within levee roads, railways, roads, buildings, and landscapes as well as barren areas that have been disturbed and are not vegetated. A minimal amount of this cover type occurs in the study area. Because of the disturbance related to

installation of landscaping and the ongoing maintenance, these areas provide minimal value to wildlife.

3.10.2.2.5 Special-Status Wildlife Species

Special-status wildlife species are defined as animals that are legally protected under the ESA, CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species are defined as:

- species that are listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the *Federal Register* for proposed species);
- species that are candidates for future listing as threatened or endangered under the ESA (72 FR 69034, December 6, 2007);
- species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5);
- species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380);
- animals that are California species of special concern (California Department of Fish and Game 2008; Remsen 1978; California Department of Fish and Game and Point Reyes Bird Observatory 2001 [birds]; Williams 1986 [mammals]; and Jennings and Hayes 1994 [amphibians and reptiles]); and
- animals fully protected in California (CFGC 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians].

Based on the USFWS (2009) list for the quadrangles within the study area and Sacramento, Solano, and Yolo Counties, a review of CNDDB (2009) occurrences within a 10-mile radius of the study area, and personal observations, 35 special-status wildlife species were identified as having potential to occur within the study area and surrounding region (Table 3.10-2). Of these, 20 have low to no potential to occur because the study area is outside the species' known range or suitable habitat is absent. The remaining 15 could occur in the study area and are described in more detail below.

Table 3.10-2. Special-Status Wildlife Species with Potential to Occur in the Study Area

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Invertebrates				
Delta green ground beetle *Elaphrus viridus*	T/–/–	Restricted to Olcott Lake and other vernal pools at Jepson Prairie Preserve, Solano County	Sparsely vegetated edges of vernal lakes and pools; occur up to 250 feet from pools	None. Study area is outside of the species' range
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–/–	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant	High. Known occurrences within the study area
Conservancy fairy shrimp *Branchinecta conservatio*	E/–/–	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	None. Study area is outside of the species' range
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	Low. No suitable habitat in the study area
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–/–	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	Low. No suitable habitat in the study area
Lange's metalmark butterfly *Apodemia mormo langei*	E/–/–	Once found throughout the Antioch Dunes; range now reduced to less than 10 acres of Antioch Dunes in Contra Costa County	Limited to dense to moderately dense patches of food plant, wild buckwheat, in stabilized sand dunes	None. Study area is outside of the species' range
Amphibians				
California tiger salamander *Ambystoma californiense*	T/SSC/–	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	None. No suitable habitat in the study area

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
California red-legged frog *Rana aurora draytonii*	T/SSC/–	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods	None. The study area is outside of this species' current known range. This species is believed to be extirpated from the valley floor
Reptiles				
Silvery legless lizard *Anniella pulchra pulchra*	–/SSC/–	Along the Coast, Transverse, and Peninsular Ranges from Contra Costa County to San Diego County with spotty occurrences in the San Joaquin Valley	Habitats with loose soil for burrowing or thick duff or leaf litter; often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas	Low. No CNDDB occurrences within the study area. Potential habitat within the study area
Giant garter snake *Thamnophis couchi gigas*	T/T/–	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	Moderate to high. CNDDB occurrences within 3 miles of study area. Suitable habitat within study area
Western pond turtle *Actinemys marmorata*	–/SSC/–	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	High. Species observed within study area in ponds west of South River Road

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Birds				
Double-crested cormorant *Phalacrocorax auritus* (rookery site)	–/SSC/–	Winters along the entire California coast and inland over the Coast Ranges into the Central Valley from Tehama County to Fresno County; a permanent resident along the coast from Monterey County to San Diego County, along the Colorado River, Imperial, Riverside, Kern and King Counties, and the islands off San Francisco; breeds in Siskiyou, Modoc, Lassen, Shasta, Plumas, and Mon Counties; also breeds in the San Francisco Bay Area and in Yolo and Sacramento Counties	Rocky coastlines, beaches, inland ponds, and lakes; needs open water for foraging, and nests in riparian forests or on protected islands, usually in snags	Low. Observed foraging in the Sacramento River near the study area. No CNDDB nesting records within study area. Potential nesting habitat within study area
White-faced ibis *Plegadis chihi* (rookery site)	–/SSC/–	Both resident and winter populations on the Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds at Honey Lake, Lassen County, at Mendota Wildlife Management Area, Fresno County, and near Woodland, Yolo County	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	Low. No CNDDB nesting records within study area. Low quality nesting habitat within study area
California black rail *Laterallus jamaicensis coturniculus*	–/T/–	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	None. No suitable habitat within study area

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
California clapper rail *Rallus longirostris obsoletus*	E/E/–	Marshes around the San Francisco Bay and east through the Delta to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the mud in sloughs	None. Study area is outside of the species' range
Mountain plover *Charadrius montanus*	PT/SSC/–	Does not breed in California; in winter, found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grainfields	None. Species does not breed within study area.
Western snowy plover (inland population) *Charadrius alexandrinus nivosus*	–/SSC/–	Nests at inland lakes throughout northeastern, central, and southern California, including Mono Lake and Salton Sea	Barren to sparsely vegetated ground at alkaline or saline lakes, reservoirs, ponds and riverine sand bars; also along sewage, salt-evaporation, and agricultural waste-water ponds	None. No suitable nesting habitat within the study area
Northern harrier *Circus cyaneus*	–/SSC/–	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	Moderate. No CNDDB nesting records within the study area. Suitable nesting habitat in study area
White-tailed kite *Elanus leucurus*	–/FP/–	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Moderate. No CNDDB nesting records within the study area. Suitable nesting habitat in study area
Swainson's hawk *Buteo swainsoni*	–/T/–	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High. CNDDB nesting records within study area

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Western burrowing owl *Athene cunicularia hypugea*	–/SSC/–	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High. CNDDB nesting records within study area
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	–/E/–	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	None. No suitable nesting habitat within the study area; forests in study area are dominated by valley oak and contain abundant scrub jays
Loggerhead shrike *Lanius ludovicianus*	–/SSC/–	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Moderate. No CNDDB nesting records within the study area. Suitable nesting habitat in study area
Tricolored blackbird *Agelaius tricolor*	–/SSC/–	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	High. CNDDB nesting records within study area

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	–/SSC/–	Locally numerous in the Klamath Basin, Modoc Plateau, Great Basin desert, and large mountain valleys in northeastern California; and in the San Joaquin Valley. Common breeders in the Colorado River valley, the Salton Sink, and the western Mojave desert; scarce in the Sacramento Valley and along the southern coast in Los Angeles, Riverside, and San Bernardino counties.	Nest in marshes with tall emergent vegetation, such as tules or cattails, generally in open areas and edges over relatively deep water. Breeding marshes often on edges of deep water bodies such as lakes, reservoirs, and or larger ponds	Moderate. CNDDB nesting records approximately 4.5 miles from the study area. Suitable nesting habitat in study area
Purple martin *Progne subis*	–/SSC/–	Coastal mountains south to San Luis Obispo County, west slope of the Sierra Nevada, and northern Sierra and Cascade ranges. Absent from the Central Valley except in Sacramento. Isolated, local populations in southern California	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges	Moderate. CNDDB nesting records under nearby freeway. Suitable nesting habitat in study area
Bank swallow *Riparia riparia*	–/T/–	Occurs along the Sacramento River from Shasta County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	Moderate. No CNDDB nesting records within study area. Limited suitable nesting habitat along portions of the Sacramento River within the study area
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	–/SSC/–	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover	None. Study area is outside of the species' range

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Grasshopper sparrow *Ammodramus savannarum*	–/SSC/–	Summer resident in the foothills of the Sierra Nevada and Coast Range from Mendocino and Trinity counties south to San Diego County.	Dry, dense grasslands with a variety of grasses and tall forbs and scattered shrubs.	Low. No CNDDB nesting records within study area. Potential nesting habitat within study area
Suisun song sparrow *Melospiza melodia maxillaris*	–/SSC/–	Restricted to the extreme western edge of the Delta, between the cities of Vallejo and Pittsburg near Suisun Bay	Brackish and tidal marshes supporting cattails, tules, various sedges, and pickleweed	None. Study area is outside of the species' range
Mammals				
Hoary bat *Lasurius cinerius*	–/SSC/–	Occurs throughout California from sea level to 13,200 feet	Primarily found in forested habitats. Also found in riparian areas and in park and garden settings in urban areas. Day roosts within foliage of trees	High. Reported in CNDDB to occur within study area. Suitable roosting habitat in study area
Pallid bat *Antrozous pallidus*	–/SSC/FSS, WBWG: High priority	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid-level elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	Moderate. Not reported to occur within study area; known to occur within 10 miles of the study area
Western red bat *Lasiurus blossevillii*	–/–/FSS, WBWG: High priority	Scattered throughout much of California at lower elevations	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	Moderate. Not reported to occur within study area; known to occur within 10 miles of the study area
Salt marsh harvest mouse *Reithrodontomys raviventris*	E/E, FP	San Francisco, San Pablo, and Suisun Bays; the Delta	Salt marshes with a dense plant cover of pickle-weed and fat hen; adjacent to an upland site	None. Study area is outside of the species' range

Common and Scientific Names	Status[a] Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
American badger *Taxidea taxus*	–/SSC/–	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground	Low. One historic record (1938) reported 8 miles from the study area. Limited suitable habitat within study area

[a] Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act
T = listed as threatened under the Federal Endangered Species Act
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded
– = no listing

State

E = listed as endangered under the California Endangered Species Act
T = listed as threatened under the California Endangered Species Act
FP = fully protected under the California Fish and Game Code
SSC = species of special concern in California
– = no listing

Western Bat Working Group (WBWG) Available: <http://www.wbwg.org/spp_matrix.html>

High priority = species are imperiled or at high risk of imperilment.
Moderate priority= this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.
Low priority = While there may be localized concerns, the overall status of the species is believed to be secure.

1

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle (VELB) is federally listed as threatened under ESA. The range of the beetle extends throughout the Central Valley of California and associated foothills, from the 3,000-foot-high contour in the east foothills, through the valley floor, to the watershed of the Central Valley in the west foothills (U.S. Fish and Wildlife Service 1999a). Elderberry shrubs are found in the remaining riparian forests and grasslands of the Central Valley and adjacent foothills. The beetle is often associated with various plant species, such as Freemont's cottonwood, California sycamore, willow, and oak (U.S. Fish and Wildlife Service 1999a).

Elderberry shrubs (*Sambucus* sp.) are the host plant for VELB and are a common component of the remaining riparian forests of the Central Valley. Elderberry shrubs are also common in upland habitats. Field surveys have found that adult VELB feed on elderberry foliage and perhaps flowers and are present from March through early June. It is during this time that the adults mate. The females lay their eggs, either singularly or in small clusters, in bark crevices or at the junction of stem and trunk or leaf petriole and stem. After hatching, a larva burrows into the stem of the elderberry where it creates a gallery, which it fills with grass and shredded wood. After the larva transforms into an adult beetle, it chews an exit hole and emerges from the elderberry. The life span of VELB ranges from 1 to 2 years. Studies of the spatial distribution of occupied shrubs suggest that the beetle is a poor disperser. (U.S. Fish and Wildlife Service 1999a.)

Several CNDDB (2009) records of VELB are reported to occur in the study area along the Sacramento River North and South Levee reaches. Though not reported to occur in other levee reaches within the study area, VELB has potential to occur wherever elderberry shrubs sized 1 inch or greater at ground level occur.

Giant Garter Snake

The giant garter snake is listed as threatened under the ESA and CESA. The giant garter snake is the largest garter snake, reaching a maximum total length of at least 64 inches. Dorsal background coloration varies from brownish to olive with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes. (U.S. Fish and Wildlife Service 1999b.)

Giant garter snakes are endemic to wetlands in the Sacramento and San Joaquin Valleys and inhabit marshes, sloughs, ponds, small lakes, low-gradient streams and other waterways, and agricultural wetlands such as irrigation and drainage canals and rice fields, as well as the adjacent uplands. Essential habitat components consist of:

- adequate water during the species' active season (early spring through mid-fall) to provide food and cover;
- emergent herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season;
- upland habitat with grassy banks and openings in waterside vegetation for basking; and
- higher-elevation uplands for cover and refuge from floodwaters during the dormant season in winter. (U.S. Fish and Wildlife Service 1999b.)

The giant garter snake is extremely aquatic and rarely found away from water. Giant garter snakes actively forage in the water and retreat to water to escape from predators and when disturbed. The

predominant prey species include crayfish, carp (*Cyprinus carpio*), mosquitofish (*Gambusia affinis*), bullfrogs, and Pacific tree frogs. Giant garter snakes are typically absent from larger rivers and other water bodies that support introduced populations of large predatory fish and from wetlands with sand, gravel, or rock substrates. Riparian woodlands do not typically provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations. (U.S. Fish and Wildlife Service 1999b.)

Giant garter snakes hibernate in small mammal burrows and other soil crevices located near aquatic habitat above prevailing flood levels throughout the winter months (November until early spring). They typically select burrows with sunny exposure along south- and west-facing slopes. Giant garter snakes also use burrows as refuge from extreme heat during their active period. The USGS Biological Resources Division has documented giant garter snakes using burrows in summer as much as 165 feet away from the marsh edge. Overwintering giant garter snakes have been documented using burrows as far as 820 feet from the edge of marsh habitat. (U.S. Fish and Wildlife Service 1999b.)

There are no CNDDB (2009) records for giant garter snakes within the study area, although there are several occurrences within 10 miles of the study area. The closest of these occurrences is located approximately 3 miles from the study area in a drainage canal. This record is labeled as sensitive and therefore provides no specifics on location or type of observation. Other recorded occurrences within 10 miles of the study area include records for one juvenile located in a drainage canal 1.5 miles south of Del Paso Road, one adult found within the Yolo Bypass 0.75 mile south of I-80, and numerous other records that are labeled as sensitive (California Natural Diversity Database 2009). Within the study area, emergent wetlands and open water areas in the Yolo Bypass have the highest potential to support giant garter snakes. Throughout the study area, other emergent wetlands and open water areas may provide suitable aquatic habitat, and upland areas adjacent to aquatic habitat may provide winter hibernacula for this species. All levee reaches within the study area have potential to support this species.

Western Pond Turtle

The western pond turtle is a California species of special concern. The western pond turtle is the only abundant turtle native to California (California Department of Fish and Game 2005). It was historically found in most Pacific slope drainages between the Oregon and Mexican borders. It is still found in suitable habitats west of the Sierra-Cascade crest (Jennings and Hayes 1994).

Western pond turtles require some slow-water aquatic habitat and are uncommon in high-gradient streams (Jennings and Hayes 1994). The banks of inhabited waters usually have thick vegetation, but basking sites such as logs, rocks, or open banks must also be present (California Department of Fish and Game 2005). Depending on the latitude, elevation, and habitat type, the western pond turtle may become inactive over winter or remain active year-round. Nest sites are typically found on slopes that are unshaded and have high clay or silt composition (Jennings and Hayes 1994). Eggs are laid from March to August, depending on local conditions, and incubation lasts from 73 to 80 days. Western pond turtles are omnivorous and feed on aquatic plant material, aquatic invertebrates, fishes, frogs, and even carrion (California Department of Fish and Game 2005).

CNDDB (2009) records do not indicate any western pond turtle occurrences within the study area; however, pond turtles have been incidentally observed in ponds west of South River Road, located adjacent to the Sacramento River South Levee reach, by ICF International biologists. Additionally, western pond turtle is recorded to occur 7 miles east of the study area in drainage at the McClellan Air Force Base. Throughout the study area, open water (including irrigation canals) and emergent

wetland habitats provide potentially suitable aquatic habitat, while annual grassland, riparian forest, and other upland areas adjacent to aquatic habitats provide potential winter hibernacula and nesting habitat. All levee reaches within the study area have potential to support this species.

Swainson's Hawk

Swainson's hawks are protected under the MBTA and are state-listed as threatened. Swainson's hawks inhabit grasslands, sage-steppe plains, and agricultural regions of western North America during the breeding season, and winter in grassland and agricultural regions from central Mexico to southern South America (England et al. 1997).

In California, the nesting distribution includes the Sacramento and San Joaquin Valleys, the Great Basin sage-steppe communities and associated agricultural valleys in extreme northeastern California, isolated valleys in the Sierra Nevada in Mono and Inyo Counties, and limited areas of the Mojave Desert region (California Department of Fish and Game 1994).

Since 1980, based on nesting records alone, populations in California appear relatively stable. However, continued agricultural conversion and practices, urban development, and water development have reduced available habitat for Swainson's hawks throughout their range in California; this habitat reduction could potentially result in a long-term declining trend. The status of populations, particularly with respect to juvenile survivorship, remains unclear.

In California, Swainson's hawk habitat generally consists of large, flat, open, undeveloped landscapes that include suitable grassland or agricultural foraging habitat and sparsely distributed trees for nesting (England et al. 1997). Foraging habitat includes open fields and pastures. Preferred foraging habitats for Swainson's hawk include alfalfa fields, fallow fields, low-growing row or field crops, rice fields during the non-flooded period, and cereal grain crops. Prey species include ground squirrels, California voles, pocket gophers, deer mice, reptiles, and insects (California Department of Fish and Game 2000; England et al. 1997).

Swainson's hawks usually nest in large native trees such as valley oak, cottonwood, and willows, although non-native trees such as eucalyptus (*Eucalyptus* spp.) are occasionally used. Nests occur in riparian woodlands, roadside trees, trees along field borders, isolated trees and small groves, trees in windbreaks, and trees on the edges of remnant oak woodlands. In some locales, urban nest sites have been recorded. The breeding season is typically March to August (England et al. 1997).

CNDDB (2009) records indicate that Swainson's hawks are known to nest within or adjacent to all levee reaches within the study area. Large trees located in and adjacent to the study area provide suitable nesting habitat, and row and field agricultural lands and grasslands provide suitable foraging habitat.

White-Tailed Kite

The white-tailed kite is protected under the MBTA and is a fully protected species under the CFGC. White-tailed kites were threatened with extinction in North America during the early 20th century. Populations recovered throughout its range in the United States from small populations that survived in California, Texas, and Florida. However, since the 1980s, many white-tailed kite populations have been declining, apparently because of loss of habitat and increased disturbance of nests. (Dunk 1995.)

The breeding season generally extends from early February through early August. White-tailed kites usually nest in large native trees, although non-native trees also are occasionally used. Nest trees are generally at the edge of wooded habitat next to open fields. Large trees in areas that have been developed may also be used, although the trees need to be close to open fields for foraging (Dunk 1995). White-tailed kites feed primarily on small mammals including voles (*Microtus sp.*), pocket mice (*Perognathus sp.*), and harvest mice (*Reithrodontomys megalotis*).

CNDDB (2009) records indicate white-tailed kite nesting occurrences within 10 miles of the study area. Large trees in and adjacent to the study area provide suitable nesting habitat, and agricultural fields and other open areas provide suitable foraging habitat. All levee reaches in the study area provide suitable nesting and foraging habitat for this species.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is designated as a California species of special concern. Loggerhead shrikes are a widespread species in North America, occurring from the southern Canadian provinces across most of the United States into Mexico (Yosef 1996). In California, loggerhead shrikes occur in open habitats with scattered shrubs, trees, posts, fences, utility lines, and other perches. Habitats include valley foothill forests, pinyon-juniper, desert riparian, and Joshua tree habitats (California Department of Fish and Game 2005). Loggerhead shrikes are adaptable to urban environments as long as preferred habitat characteristics and abundant prey supplies are present (Yosef 1996).

The loggerhead shrike is a predatory songbird. As opportunistic predators, loggerhead shrikes feed on a wide variety of prey, including insects, small mammals and birds, reptiles, amphibians, and occasionally carrion. Prey is often impaled on sharp objects such as thorns and barbed wire fences (Yosef 1996). Nesting habitat includes densely foliaged shrubs and trees near open habitats (California Department of Fish and Game 2005).

CNDDB (2009) records do not indicate any loggerhead shrike occurrences within 10 miles of the study area. Al levee reaches within the study area have potential to support nesting and foraging of this species.

Tricolored Blackbird

The tricolored blackbird is a California species of special concern. Within California, active breeding colonies occur in 46 California counties with the largest colonies in the Central Valley. In the Central Valley, breeding extends east into the foothills of the Sierra Nevada. Historically, most California colonies have been located in the Sacramento and San Joaquin Valleys, but habitat loss has reduced breeding considerably in this area in recent years (Beedy and Hamilton 1999). Tricolored blackbirds have three basic requirements for selecting their breeding colonies: open, accessible water; a protected nesting substrate, including either flooded vegetation or thorny/spiny vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. They often change their nest locations from year to year. An increasing percentage of tricolored blackbirds are using Himalayan blackberry as well as dairies for nesting habitat (Beedy and Hamilton 1999).

Suitable breeding habitats within the Central Valley have been found to include emergent marsh areas with tules or cattail and upland habitats consisting of thistle, nettle, blackberry, wheat, and other shrubby upland substrates (Meese 2006). Foraging habitats in all seasons include annual

grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (e.g., large tracts of alfalfa with continuous mowing schedules and recently tilled fields), cattle feedlots, and dairies. Tricolored blackbirds also occasionally forage in riparian scrub habitats and along marsh borders. Weed-free row crops and intensively managed vineyards and orchards do not serve as regular forage sites (Beedy and Hamilton 1999).

CNDDB (2009) indicated one tricolored blackbird nesting site within the study area, located near the Port of Sacramento, in the vicinity of the Port North Levee reach. The birds were reported to be nesting in an area containing thistle and mustard in 1969 and 1974. The size of this population was not reported. Emergent wetlands, Himalayan blackberry brambles, hay and grain fields, and grasslands containing dense forbs within the study area provide suitable nesting habitat. All levee reaches within the study area have potential to support this species.

Yellow-Headed Blackbird

Yellow-headed blackbird is a California species of special concern. This species breeds in central California and is a year-round resident in southern California. Nests are built in emergent vegetation of deep-water palustrine wetlands. The species also constructs nests over deeper water, primarily in cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), or reeds (*Phragmites* spp.), often in the same wetlands as nesting red-winged blackbirds. Yellow-headed blackbird forages within wetlands and surrounding grasslands, as well as open agricultural areas—harvested grain fields, plowed fields, meadows, and pastures—or savanna. The species is not known to inhabit the forest interior, but it may use forest edges for roosting, loafing, or foraging. (Twedt and Richard 1995.)

During the breeding season, yellow-headed blackbirds feed primarily on aquatic prey, feeding aquatic insects to nestlings. During the post-breeding season, the species is known to consume primarily cultivated grains and weed seeds, often foraging in large flocks. (Twedt and Richard 1995.)

CNDDB (2009) indicates a historic (1899) occurrence for this species along the Sacramento River 4 miles east of the study area. Emergent wetlands within the study area provide suitable nesting habitat. All levee reaches have potential to support nesting and foraging of this species.

Purple Martin

Purple martin is a California species of special concern. This species breeds locally along eastern slopes of Cascade Mountains of California south to extreme southwestern California. The species winters in South America in lowlands east of the Andes south to northern Argentina (rarely) and southern Brazil. Purple martin is the largest swallow in North America and among the largest in the world. These martins inhabit montane forest or Pacific lowlands, restricted to areas with dead snags containing woodpecker holes, generally patchy and local in occurrence. This species is reported to typically avoid deserts and grasslands. (Brown 1997.)

Purple martin is a diurnal, aerial feeder that feeds on insects at higher elevations than other swallows, sometimes up to 490 feet. Because of the height of foraging, individuals are rarely observed foraging, with the exception being late afternoons and near dusk when birds feed low and close to nest sites. The species presumably ranges over areas immediately surrounding nest site, although there is no information on typical travel distance while foraging. Cold, rainy weather in spring forces purple martins, especially migrants, to feed low over ponds and lakes, apparently in pursuit of aquatic insects along water surface. (Brown 1997.)

The nearest CNDDB (2009) occurrence for this species is for a colony nesting in weep holes under the I-5 Freeway overpass at I Street within 1 mile of the Sacramento River North and South Levee reaches. An estimated 21 to 29 pairs of birds nest at this location. Numerous other occurrences are reported within a 10-mile radius for colonies nesting under freeway or street overpasses. These include records located just north of Arcade Creek where I-80 crosses Roseville Road; Marconi Avenue overpass of Auburn Boulevard and the Union Pacific and light rail tracks; El Camino overpass of the Union Pacific and light rail tracks; U.S. 50 at Redding Road and the Union Pacific and light rail tracks; between 65th Street and Howe Avenue; U.S. 50 from 34th Street to Stockton Boulevard; Capital City Freeway (Business I-80) between R and S Streets; the east bound U.S. 50 off-ramp to southbound SR 99 and northbound SR 99 off-ramp to eastbound U.S. 50; Sutterville Road over the Union Pacific rail yard west of SR 99; and U.S. 50 between 18th and 20th Streets. (California Natural Diversity Database 2009.)

Suitable nesting habitat for this species occurs in the riparian forest and other woodland and forest areas throughout the study area.

Bank Swallow

The bank swallow is a state-listed threatened species. Within California, bank swallow is a regular breeder from Monterey to San Francisco County and in northern California including Siskiyou, Shasta, and Lassen Counties and along Sacramento River from Shasta County south to Yolo County. Bank swallows nest in erodible soils on vertical or near-vertical banks and bluffs in lowland areas dominated by rivers, streams, lakes, and oceans. Based on the often ephemeral nature of nesting areas, bank swallow has low nest site fidelity. Foraging habitats surrounding nesting colony sites include wetlands, open water, grasslands, riparian forests, agricultural lands, shrublands, and occasionally upland woodlands. (Garrison 1999.)

Bank swallow is an aerial feeder from dawn to dusk that takes flying or jumping insects almost exclusively on the wing. The species is reported to occasionally eat terrestrial and aquatic insects or larvae and less often to consume vegetable matter. Bank swallow may feed on the ground where high concentrations of suitable insect prey are present. (Garrison 1999.)

There are no CNDDB (2009) occurrences for this species within the study area. Numerous nesting records for this species occur approximately 5 miles from the study area along the American River. Additionally, this species is recorded to nest approximately 12 miles north of the study area along the Sacramento River. Within the study area, suitable breeding habitat includes areas along the Sacramento River where banks are vertical to near-vertical. Limited suitable nesting habitat therefore occurs along the Sacramento River North and South Levee reaches of the study area.

Northern Harrier

The northern harrier is a California species of special concern and is protected under the MBTA and CFGC 3503 and 3503.5. The northern harrier is a medium-sized hawk raptor of upland grasslands and fresh- and saltwater marshes. In California, northern harriers are a permanent resident of the northeastern plateau, coastal areas, and Central Valley (Macwhirter and Bildstein 1996). Northern harriers breed in California in the Central Valley and Sierra Nevada (California Department of Fish and Game 2005).

Northern harriers frequent meadows, grasslands, desert sinks, open rangelands, and fresh- and saltwater emergent wetlands; they are seldom found associated with wooded habitats. Harriers feed

mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish (California Department of Fish and Game 2005). Harriers mostly nest in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or sagebrush flats several miles from water (Macwhirter and Bildstein 1996). The nest is built of a large mound of sticks on wet areas and a smaller cup of grasses on dry sites.

CNDDB (2009) records do not indicate any northern harrier occurrences within 10 miles of the study area. Non-orchard agricultural fields and annual grasslands provide suitable foraging habitat, and the annual grassland, irrigated pasture, and emergent wetland habitat within the study area provides suitable nesting and foraging habitat. All levee reaches within the study area have potential to support nesting and forging of this species.

Western Burrowing Owl

Western burrowing owls are a California species of special concern and are protected under the MBTA. Western burrowing owls were formerly a common permanent resident throughout much of California, but population declines became noticeable by the 1940s and have continued to the present. Farming has taken a major toll on western burrowing owl populations and their habitat by destroying nesting burrows and exposing breeders and their young to the toxic effects of pesticides. (Haug et al. 1993.)

Western burrowing owls prefers open, dry, short grassland habitats with few trees and are often associated with burrowing mammals such as California ground squirrels. They occupy burrows, typically abandoned by ground squirrels or other burrowing mammals, but may also use artificial burrows such as abandoned pipes, culverts, and debris piles (California Department of Fish and Game 1995; Haug et al. 1993). Prey includes arthropods, amphibians, small reptiles, small mammals, and birds, particularly horned larks (Haug et al. 1993).

The breeding season usually extends from late February through August. Western burrowing owls often nest in roadside embankments, on levees, and along irrigation canals. This species is more diurnal than most owls and can often be observed during the day standing outside the entrance to its burrow. (Haug et al. 1993.)

CNDDB (2009) indicated two nesting burrowing owl records within the study area. These records are located adjacent to the DWSC 0.9 mile southeast of Greens Lake on the east side of the Yolo Bypass, within the DWSC West Levee reach, and 0.2 mile southwest of the intersection of U.S. Highway 84 and Harbor Boulevard, within the Sacramento River North Levee reach.

Numerous other nesting occurrences occur within 10 miles of the study area. The closest of these include nesting records located in the vicinity of McKinley Park near Sacramento State University and the northwest corner of Sacramento Executive Airport. The levees provide suitable nesting habitat where ground squirrel burrows are present and open areas near suitable nesting habitat provide suitable foraging habitat. All levee reaches within the study area have potential to support nesting and foraging of this species.

Hoary Bat

The hoary bat is a California species of special concern. Hoary bats are found primarily in forested habitats, including riparian forests, and may occur in park and garden settings in urban areas (Brown and Pierson 1996). Habitats that are suitable for providing maternity roosts include all

woodlands that have medium- to large-sized trees with dense foliage. Females and young tend to roost at higher sites in trees (California Department of Fish and Game 2005).

CNDDB (2009) records indicate a hoary bat observation within the study area in the Sacramento River North Levee reach. Suitable habitat in the study area occurs in riparian forests and other forests and woodlands, and all levee reaches in the study area have potential to support this species.

Western Red Bat

Western red bat is a California species of special concern that occurs throughout much of California at lower elevations. It is found primarily in riparian and wooded habitats but also occurs seasonally in urban areas (Brown and Pierson 1996). Western red bats roost in the foliage of trees that are often located on the edge of habitats adjacent to streams, fields, or urban areas. This species breeds in August and September, and young are born in May through July (Zeiner et al. 1990b).

CNDDB (2009) records indicate one western red bat observation within 10 miles of the study area. Suitable habitat within the study area occurs in riparian forests and other forests and woodlands, and all levee reaches in the study area have potential to support this species.

Pallid Bat

The pallid bat is a California species of special concern. Pallid bats are found in a variety of habitats but are particularly associated with oak woodlands, ponderosa pine, redwood, and sequoia habitats in central and northern California. Pallid bats have a high reliance on trees for day roosts. (Brown and Pierson 1996.)

CNDDB (2009) records indicate one pallid bat observation within 10 miles of the study area. Suitable habitat within the study area occurs in riparian forests and other forests and woodlands, and all levee reaches within the study area have potential to support this species.

3.10.3 Environmental Consequences

This section describes the effect analysis relating to wildlife for the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. How this effect differs among reaches is discussed, if applicable. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.10.3.1 Assessment Methods

3.10.3.1.1 Effect Mechanisms

The following program-related activities could affect wildlife resources within the study area. These types of direct and indirect effects were used to assess effects on wildlife resources.

Direct Effects

Direct effects on wildlife could be caused by the following actions:

- vegetation clearing (including trees), grading, excavating/trenching, placement of rock slope protection, and paving activities during construction;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site;
- short-term construction-related noise (from equipment); and
- degradation of water quality in drainages and wetlands, resulting from construction runoff containing petroleum products.

Indirect Effects

Indirect effects on wildlife could e caused by the following actions:

- permanently altering light and noise levels;
- altering hydrology;
- causing damage through toxicity associated with herbicides, insecticides, and rodenticides;
- introducing pet and human disturbance (including trash dumping);
- increasing habitat for native competitors or predators; and
- introducing invasive non-native species.

3.10.3.2 Determination of Effects

For this analysis, an effect pertaining to wildlife resources was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 et seq.).

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or the USFWS;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan; or
- contribute to a substantial reduction or elimination of species diversity or abundance.

Qualitative relationships between environmental conditions and life stage survival or wildlife resources are the basis of the effect assessment. Cause and effect relationships are identified for

assessment species, including the relationship between environmental conditions and habitat, and the effects of changes in habitat on survival.

The effect analysis below is qualitative and programmatic and is not based on site-specific information. The mitigation measures described for potential effects on sensitive biological resources have not been developed through formal consultation or coordination with resource agencies (e.g., DFG, USFWS, NMFS, and the USACE). As part of the environmental analysis for project phases, the program proponent will contact agencies as part of the environmental compliance process to determine specific compensatory mitigation for effects on wetlands, state- and federally listed species, and riparian habitats. Additional mitigation measures may also be identified as conditions of future action permits (e.g., a BO, Section 7 Incidental Take Statement, or Section 1602 Streambed Alteration Agreement).

3.10.3.3 Effects and Mitigation Measures

3.10.3.3.1 No Action Alternative

The No Action Alternative is a continuation of the existing deficiencies along the nine levee reaches (i.e., no levee alternatives would be implemented to meet the minimum level of acceptable flood protection). Current levee maintenance activities such as mowing and application of herbicides would continue. No direct or indirect construction-related effects on wildlife or their habitats would occur.

Without levee improvements, there is the continued risk of levee failure. A catastrophic levee failure would result in flooding and inundation that could significantly affect wildlife and their upland or wetland habitats by physical displacement, mortality, or destruction of habitat. In addition, cleanup and repair activities could result in physical displacement for extended periods of time and significant effects on habitat. If a flood event were to occur along the Sacramento River corridor, the narrow band of valuable riparian habitat located along the levees could be damaged. Given the importance of this riparian corridor for numerous special-status species and for the pacific flyway in general, loss or fragmentation of this habitat would be a significant effect, and it could take decades for a mature riparian forest to re-establish itself in the affected areas, if USACE vegetation policies allow re-establishment at all. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on wildlife and their habitats cannot be quantified based on available information.

As discussed under the No Action Alternative in Section 3.8, Vegetation and Wetlands, compliance with the vegetation-free zone as described in the USACE's Vegetation Guidance would be required with program implementation but also in the absence of program implementation. Compliance with the vegetation guidance could result in the removal of a substantial amount of vegetation, including riparian vegetation that supports SRA habitat. This would result in significant effects on fish and their habitats. However, given the uncertainties surrounding the potential for variances and implementation of the vegetation guidance, any estimation of effects would be speculative.

3.10.3.3.2 Flood and Recreation Program Alternatives

Effect WILD-1: Permanent Loss of Riparian Habitat for Special-Status Wildlife Species as a Result of Levee Vegetation Removal

All levee alternatives proposed under the program would follow USACE's policies regarding vegetation on levees, which forbid all woody vegetation on the crown, slopes, and within 15 feet of the waterside and landside levee toes. These zones would be maintained free of woody vegetation in perpetuity. Thus, the removal of a substantial amount of mature trees and vegetation from the banks of the Sacramento River may be required.

Permanent loss of the woody vegetation in compliance with USACE's policies would result in a significant effect on riparian habitat. The full extent of this effect is dependent on what portions of the existing levee would be officially deemed as the levee prism according to USACE. In some cases, the current levees are wider than the minimum requirements (or may become wider with the implementation of program alternatives such as an adjacent levee raise) and existing vegetation may fall outside of the vegetation free zone. Moreover, dependent on site conditions, variances that would allow vegetation to remain may be issued on a case-by-case basis.

Riparian habitats, particularly in the Central Valley, provide essential nesting and cover habitat for numerous special-status wildlife species with known or potential occurrence in the study area, including VELB, western pond turtle, Swainson's hawk, white-tailed kite, hoary bat, western red bat, and pallid bat. VELB are dependent on riparian habitats containing elderberry shrubs, which are the host plants for VELB and are needed to complete the insect's life cycle. Western pond turtle use riparian vegetation for nesting and cover during the breeding season and for overwintering. Swainson's hawk and white-tailed kite require mature trees for nesting, which are most prevalent within the Central Valley within riparian habitats, particularly those along the Sacramento River. Though human-made structures are often used for day and night roosting by special-status bats such as hoary bat, western red bat, and pallid bat, riparian habitats provide essential natural roosting and cover habitat adjacent to important foraging areas.

Therefore, removal of woody riparian vegetation along levees, in accordance with USACE's vegetation policies, would result in the loss of substantial key habitats needed to support special-status species in the area. Because the riparian habitats within the study area are some of the most extensive in the Central Valley, the loss of these habitats would be a significant effect. Implementation of VEG-MM-1 would reduce the effect on species in the area over time but because mature riparian habitat cannot be replaced in the short term, this effect would still be significant. In addition, depending on the intensity of the effect, implementation of Mitigation Measure VEG-MM-1 may reduce but not fully compensate for effects. Therefore, this effect is potentially significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect WILD-1 Finding	With Mitigation
Significant	Potentially significant and unavoidable

Mitigation

Mitigation Measure VEG–MM-1: Compensate for the Disturbance or Removal of Riparian Habitat

See Section 3.8, Vegetation and Wetlands, for a full description of this measure.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction

The study area has potential to support numerous special-status wildlife species. As described above, the study area contains documented occurrences of VELB, Swainson's hawk, western burrowing owl, tricolored blackbird, and hoary bat. In addition, other special-status wildlife species that have the potential to occur within the study area because of the presence of suitable habitat include giant garter snake, western pond turtle, white-tailed kite, northern harrier, loggerhead shrike, yellow-headed blackbird, purple martin, bank swallow, western red bat, and pallid bat.

Construction in the study area could result in the direct loss or indirect disturbance of special-status wildlife or their habitats that are known to occur or could occur in the study area and surrounding region (Table 3.10-2). Effects on special-status wildlife or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Significant effects on special-status wildlife associated with levee alternative projects include, but are not limited to:

- direct mortality resulting from the movement of equipment and vehicles through the action area;
- direct mortality from the collapse of burrows, resulting from soil compaction;
- loss of breeding and foraging habitat resulting from the filling of emergent wetlands and open water areas;
- loss of breeding, foraging, or refuge habitat resulting from the permanent removal of grasslands, non-orchard agricultural lands, pasturelands, riparian vegetation, and other woodland and forest habitats;
- abandoned eggs or young and subsequent nest failure for special-status and nesting birds, including raptors, as a result of construction-related noises;
- loss of suitable foraging habitat for special-status raptor species; and
- loss or disruption of migration corridors.

Depending on which special-status wildlife species (listed versus unlisted) are affected and the extent of the effect, these species could experience significant effects. However, implementation of Mitigation Measures VEG-MM-1 and VEG-MM-8 and WILD-MM-1 through WILD-MM-4 would reduce effects. The final determination would need to be made on an action-by-action basis for future phases of the program in consultation with the applicable resource regulatory agency (USFWS and/or DFG). In addition, as discussed above under Effect WILD-1 regarding the limitations caused by the vegetation- free zone, and dependent upon the amount of the effect, implementation of Mitigation Measure VEG-MM-1 may reduce but not fully compensate for effects. This effect would, therefore, be potentially significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the

Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect WILD-2 Finding	With Mitigation
Significant	Less than significant to potentially significant and unavoidable

Mitigation

Mitigation Measure VEG–MM-1: Compensate for the Disturbance or Removal of Riparian Habitat

See Section 3.8, Vegetation and Wetlands, for a full description of this measure.

Mitigation Measure VEG-MM-8: Compensate for the Loss of Wetlands and Other Waters

See Section 3.8, Vegetation and Wetlands, for a full description of this measure.

Mitigation Measure WILD-MM-1: Document Special-Status Wildlife Species and Their Habitats

The program proponent will retain a qualified wildlife biologist to document the presence or absence of suitable habitat for special-status wildlife. The following steps will be implemented to document special-status wildlife and their habitats:

- **Review existing information**. The wildlife biologist will review existing information to develop a list of special-status wildlife species that could occur in the action area. The following information will be reviewed as part of this process: the USFWS special-status species list for the action region, DFG's CNDDB, previously prepared environmental documents, city and county general plans, habitat conservation plans and natural community conservation plans (if there are any adopted by the time the action is constructed), and USFWS-issued BOs for previous actions.
- **Coordinate with state and Federal agencies**. The wildlife biologist will coordinate with the appropriate agencies (DFG and USFWS) to discuss wildlife resource issues in the action region and determine the appropriate levels of survey necessary to document special-status wildlife and their habitats.
- **Conduct field studies**. The wildlife biologist will evaluate existing habitat conditions and determine what levels of biological survey may be required. The type of survey required will depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on the existing conditions in the action area and the proposed construction activity, one or a combination of the following levels of survey may be required:
    - **Habitat assessment.** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys will be required.
    - **Conduct species-focused surveys.** Species-focused surveys (or target species surveys) will be conducted if suitable habitat is present for special-status wildlife and it is necessary to determine the presence or absence of the species in the action area. The surveys will focus

on special-status wildlife species that have the potential to occur in the region. The surveys will be conducted during a period when the target species are present and/or active.

- **Conduct protocol-level wildlife surveys.** The program proponent will comply with protocols and guidelines issued by responsible agencies for certain special-status species. USFWS and DFG have issued survey protocols and guidelines for several special-status wildlife species that could occur in the study area, including (but not limited to) VELB, Swainson's hawk, western burrowing owl, and giant garter snake. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS- or DFG-approved biologist perform the surveys. The program proponent will coordinate with the appropriate state or Federal agency biologist before initiation of protocol-level surveys to ensure that the survey results will be valid. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period, and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species.

Mitigation Measure WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan

This mitigation measure focuses on avoiding and minimizing all direct and indirect effects on special-status wildlife. The program proponent will implement the following measures to avoid and minimize effects on special-status wildlife and their habitats:

- Redesign or modify the action to avoid direct and indirect effects on special-status wildlife or their habitats, if feasible.
- Protect special-status wildlife and their habitat near the action site by installing environmentally sensitive area fencing around habitat features, such as seasonal wetlands, burrows, and nest trees. The environmentally sensitive area fencing or staking will be installed at a minimum distance from the edge of the resource as determined through coordination with state and Federal agency biologists (USFWS and DFG). The location of the fencing will be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications will contain clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced environmentally sensitive area.
- Restrict construction-related activities to the non-breeding season for special-status wildlife species that could occur in the action area. Timing restrictions may vary depending on the species and could occur during any time of the year.
- Coordinate with the appropriate resource agencies to determine whether a monitoring plan for special-status wildlife is necessary as part of the program. If a monitoring plan is required, it will be developed and implemented in coordination with appropriate agencies and will include:
  - a description of each of the wildlife species and the suitable habitat for species that could occur at the action site,
  - the locations of known occurrences of special-status wildlife species within 5 miles of the action site,
  - the location and size of no-disturbance zones in and adjacent to environmentally sensitive areas for wildlife,

- directions on the handling and relocating of special-status wildlife species found on the action site that are in immediate danger of being destroyed, and
- notification and reporting requirements for special-status species that are identified on the action site.

Mitigation Measure WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA

If mitigation measure WILD-2 is not feasible and site-specific construction activities would result in significant effects on wildlife species listed under ESA and/or CESA, a compensation plan will be developed in coordination with the appropriate resource agency, or agency-approved compensation guidelines will be followed to reduce the effect. Compensation guidelines have been identified for several special-status wildlife species, including VELB, Swainson's hawk, burrowing owl, and giant garter snake. The amount of compensation will vary depending on the amount of habitat loss or degree of habitat disturbance anticipated. The compensation plan will be developed and implemented in coordination with the appropriate state or Federal agency and will involve identifying an agency-approved mitigation bank or mitigation site (on or off site); transplanting (elderberry shrubs), re-creating (burrows), and/or preserving additional habitat for special-status wildlife species; monitoring the mitigation site; and funding the management of the mitigation site.

Mitigation Measure WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds

To avoid removing or disturbing any active migratory bird nests, tree and shrub removal, other vegetation clearing, grading, and other construction activities will be conducted during the non-breeding season (generally September 1 through February14) or after a qualified biologist determines that fledglings have left an active nest.

If activities will be conducted during the breeding season (February 15 through August 31), a qualified biologist will be retained to conduct a breeding season survey for nesting birds.

The survey will be conducted for all trees and shrubs (and vertical banks along the Sacramento River for bank swallow) that will be removed or disturbed and any suitable nesting habitat within 500 feet of construction activities, including grading. Migratory bird nest surveys will be conducted no more than 48 hours from the initiation of program activities to confirm the absence of nesting.

If the biologist determines that the area surveyed does not contain any active nests, construction activities, including tree removal, can commence without any further mitigation for species. If active nests are found, the activities will not occur until nesting activities have ceased (i.e. after a qualified biologist determines that fledglings have left the nest) or DFG is contacted to determine an appropriate buffer area needed to protect nests from program activities.

Effect WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction

The study area contains both natural and constructed habitats that support numerous common wildlife species. These species include a wide variety of terrestrial and aquatic invertebrates, birds and raptors, amphibians, reptiles, and mammal, as listed in the Environmental Setting section.

Numerous common migratory bird species have potential to nest within the study area, including red-tailed hawk, red-shouldered hawk, great horned owl, American kestrel, white-tailed kite, and

red-winged blackbird. Common bats, including California myotis (*Myotis californicus*) and small-footed myotis (*Myotis subulatus*), also have potential to roost in trees and snags within the study area. Tree (and shrub) removal, other vegetation clearing, grading, or other construction activities could remove or cause abandonment of active bird nests or bat roosts. Within the study area, suitable nesting habitat for migratory birds occurs in riparian forests, other woodlands and forests, grasslands, and pasturelands. Similarly, riparian forests and other woodlands and forests contain suitable bat roosting habitat. Effects on bird species protected under the MBTA and CFGC and/or bat roosts protected by DFG would be significant. Implementation of Mitigation Measures WILD-MM-4 and WILD-MM-5 would reduce this effect to less than significant.

Other common wildlife species are not afforded protection under CEQA or NEPA because they are considered to be widespread and abundant. Effects on these species are therefore less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect WILD-3 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds

Mitigation Measure WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects

Prior to any tree trimming and removal activities, a qualified biologist will conduct a preconstruction survey to determine whether bats are present. Trees within 100 feet of construction areas will be surveyed to ensure that adjacent bat roosts are not disturbed. The survey will consist of a nighttime emergence survey of suitable trees for evidence (presence of guano or urine stains) of use by bats, and it will be conducted no more than 14 days prior to construction activities. If the biologist determines that the area surveyed does not contain any active roosts, activities may commence without any further mitigation. If active roosts are found, roosting structures will be retained, and the need for a construction buffer will be determined through consultation with DFG. If avoidance is not possible, DFG may require that bats be excluded from the habitat prior to start of the breeding and/or hibernation season. Compensatory mitigation of the loss of roosting habitat also will be determined through consultation with DFG but may include the construction and installation of suitable replacement habitat on site, such as bat houses.

Effect WILD-4: Disruption to Wildlife Movement Corridors as a Result of Construction

Within the program study area, all levee reaches may act as movement corridors for wildlife because of their adjacency to major waterways, which provide important resources for migrating or dispersing animals. During construction of levee alternatives, movement through program sites would likely be temporarily impeded either by the placement of physical barriers (fencing) used to protect resources outside of the construction footprint or because of the presence of construction noise, which would likely discourage animals from entering the area. The nine levee reaches within the study area are considered to have high value as movement corridors, and disruption of these areas could significantly affect the ability of animals to move through these areas. However, it is assumed that construction of levee alternatives within each reach would be staggered based on varying schedule constraints at each site, and thus all sites would not be impassible at one time. Additionally, it is assumed that construction at each site would most often be completed within 1 year, thereby creating only a temporary barrier to movement within a specific localized area. The function of levee reaches to act as movement corridors would therefore be disrupted temporarily during program construction within a localized area, but this function would be restored following the completion of program construction. Further, although different levee alternatives would alter the maximum height or width of levee reaches to varying degrees, it is assumed that no treatment would drastically reduce the passability, as compared to the current condition, at any of the nine levee reaches in the study area. Therefore, this potential effect would be less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Floodwall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches. The degree of this effect would be greater in the Sacramento River North and South Levee reaches, Port North and South Levee reaches, and the South Cross Levee reach because these reaches support the greatest amount of riparian habitat and associated wildlife species in comparison to the other reaches in the study area.

Effect WILD-4 Finding	With Mitigation
Less than significant	N/A

Section 3.11
Land Use and Agriculture

3.11.1 Introduction

This section describes the regulatory and environmental setting for land use, effects on land use that would result from the program, and mitigation measures that would reduce significant effects.

The key sources of data and information used in the preparation of this section are listed below.

- *City of West Sacramento General Plan* (City of West Sacramento 2004)
- *Yolo County General Plan* (Yolo County 1983)
- *Solano County General Plan* (Solano County 2008)
- California Department of Conservation resource files

3.11.2 Affected Environment

3.11.2.1 Regulatory Setting

3.11.2.1.1 Federal

Farmland Protection Policy Act

A National Agricultural Land Study conducted in the early 1980s found that millions of acres of farmland were being converted to other uses each year in the United States. As a result, a need for Congress to implement programs and policies to protect farmland was identified. Congress then passed the Agriculture and Food Act of 1981, which contained the Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize the extent to which Federal programs contribute to the irreversible conversion of farmland to non-agricultural uses, and to ensure that Federal programs are administered in a manner that will be compatible with state, local, Federal, and private programs and policies to protect farmland. For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be used currently for agriculture. These lands may contain forest land, pasture land, cropland, or other land but may not have water or urban built-up land.

Farmland Designations

The purpose of the FMMP farmland designations is to provide consistent and impartial data to decision makers for use in assessing the status, reviewing trends, and planning for the future of agricultural land resources in California; however, the program is not responsible for regulating farmland. FMMP rates agricultural land according to soil quality and irrigation status and updates maps every 2 years. Farmland designations are discussed below.

Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops such as, citrus, tree nuts, olives, cranberries, fruits, and vegetables.

Farmland of Statewide Importance

Farmland of statewide importance is land of statewide or local importance identified by state or local agencies for agricultural use, but not of national significance.

3.11.2.1.2 State

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971.

The Williamson Act was amended in August 1998 to establish Farmland Security Zones. Under this Farm Bureau–sponsored Super Williamson Act, landowners can receive an additional 35% reduction in the land's value for property tax purposes. This additional tax reduction can be earned only if farmers and ranchers keep their property in the conservation program for at least 20 years. Farmland Security Zone contracts are comparable to the Williamson Act contracts in that each year another year is added to the agreement unless the landowner or county does not renew the contract. The legislation prohibits the annexation of land enrolled in a 20-year contract to a city, or a special district that provides non-agricultural services, or for use as a public school site.

Of California's 58 counties, 52 have adopted the Williamson Act program. Yolo County is included in those that have adopted the act. The location of these lands in the project vicinity is discussed in the Environmental Setting that follows.

3.11.2.1.3 Local

Yolo County General Plan

The *Yolo County General Plan* defines land use and zoning goals and policies for the county. The following program-related policies are included in the general plan.

Goals

- **AG-1:** Conserve and preserve agricultural lands in Yolo County, especially areas currently farmed or having prime agricultural soils and outside existing planned communities and city limits.

- **AG-3:** Ensure the compatibility of land uses adjacent to agricultural operations, so that agricultural productivity is not substantially affected.
- **AG-6:** Provide opportunities for recreation, tourism and associated support services in appropriate locations.

Policies

- **AP-1:** Land uses in areas designated for agricultural use shall be limited to those directly related to agricultural production or support of agriculture.
- **AP-2:** The County shall utilize an Agricultural Conservation Easement Program to help protect and preserve agricultural lands, as defined in this Element. This program shall require payment of an in-lieu fee sufficient to purchase a farmland conservation easement, farmland deed restriction, or other farmland conservation mechanism as a condition of approval for conversion of agricultural land to non-agricultural use. The in–lieu fee or other conservation mechanism shall recognize the importance of land value and shall require equivalent mitigation. This may include the use of a variable standard that requires a commitment to preserve fewer acres if the land to be preserved is threatened by development and a greater number of acres to be preserved if the land to be preserved is removed from development pressures.
- **AP-5:** Yolo County shall actively maintain the Williamson Act Land Conservation (Agricultural Preserve) program.

Solano County General Plan

The *Solano County General Plan* defines land use and zoning categories for the county. The following program-related policies and goals are included in the general plan.

Goals

- **LU.G-4:** Encourage land use development patterns and circulation and transportation systems that promote health and wellness and minimize adverse effects on agriculture and natural resources, energy consumption, and air quality.
- **AR.G-1:** Recognize, value, and support the critical roles of all agricultural lands in the stability and economic well-being of the county.
- **AR.G-2**: Preserve and protect the county's agricultural lands as irreplaceable resources for present and future generations.

Policies

- **LU.P-3:** The designation of specific lands and water bodies as "Agriculture", "Watershed", "Marsh", "Park & Recreation", or "Water Bodies & Courses" on the Solano County Land Use Diagram, adopted by the Solano County Board of Supervisors on December 19, 1980, and as amended subsequently consistent with Proposition A, and the Orderly Growth Initiative, shall remain in effect until December 31, 2028 except lands designated Agriculture may be re-designated pursuant to the procedure specified in Agricultural Policies AG.P-32 through AG.P-36 (providing for re-designation upon the making of specific findings, or as necessary to comply with state law requirements regarding provision of low and very low income housing, or permitting certain re-designations to open space).

In addition, these agricultural and open space lands may also be re-designated after a final judgment by a court of competent jurisdiction determining that the absence of a re-designation would constitute an unauthorized taking of private property or is otherwise unconstitutional, but only to the minimum geographical extent and intensity of use necessary to avoid such unconstitutional result. Any such re-designation shall be designed to carry out the goals and provisions of this policy to the maximum extent possible.

Further, the precise boundaries of land use designations may be subject to minor adjustment and refinement prior to development, or upon request of an affected landowner, provided such refinements reflect the overall boundaries indicated on the general plan land use diagram and are consistent with all other general plan policies, in particular, the general plan policies prohibiting piecemeal conversions of agricultural lands to non-agricultural uses.

- **LU.P-32:** Implement land use designations through a compatible zoning ordinance.
- **LU.P-34:** Promote patterns of development that encourage physical activity to reduce obesity, cardiovascular disease, asthma, diabetes, or injury; and that contribute to a "sense of place" and emotional well-being.
- **AG.P-4:** Require farmland conversion mitigation for either of the following actions:
  a. A General Plan amendment that changes the designation of any land from an agricultural to a non-agricultural use; or
  b. An application for a development permit that changes the use of land from production agriculture to a non-agricultural use, regardless of the General Plan designation.

City of West Sacramento General Plan

Land use and development in the study area are guided primarily by the *City of West Sacramento General Plan*. The general plan defines land use and zoning categories for the incorporated areas and provides an inventory of existing land uses in the city. The following policies and goals are included in the general plan.

Natural Resources

- **Goal B:** To promote the economic viability of agriculture in West Sacramento and to discourage premature development of agricultural land with non-agricultural uses, while providing for urban needs.
- **Policy 3:** The City shall encourage the County of Yolo to retain agricultural uses on lands adjacent to the city.

The general plan also includes land use standards for zoning purposes. The following program-related land use designations include public/quasi-public as a possible use: rural residential, residential, commercial/water-related, heavy industrial, industrial/water-related, waterfront, public/quasi-public, recreation and parks, and agriculture.

Delta Protection Commission

The Delta Protection Act of 1992 created the Delta Protection Commission. The Commission seeks to adaptively protect, maintain, and wherever possible, enhance and restore the overall quality of the Delta environment consistent with the Delta Protection Act. The Commission's goal is to guide

orderly, balanced conservation and development of land resources in the Delta, and to improve flood protection.

The Commission divided the Delta area into a primary zone and a secondary zone. The city of West Sacramento is in the secondary zone, and parts of the Yolo Bypass are in the primary zone. Within the primary zone, standards limit uses and practices that could affect the beneficial uses of the Delta. Local county general plans all designate the primary zone primarily for agriculture; however, recreation, wildlife habitat, and nature preserves are approved on agriculture-zoned lands.

The secondary zone of the Delta surrounds the primary zone. The area of the city that lies south of the main line is within the secondary zone. While no standards affect the secondary zone, development within these areas is coordinated with and monitored by the Commission.

3.11.2.2 Environmental Setting

This section discusses the existing conditions related to land use and agriculture in the study area.

West Sacramento lies in eastern Yolo County between the Sacramento River on the east and the east levee of the Yolo Bypass on the west. It lies directly across the Sacramento River from downtown Sacramento and is approximately 85 miles east of San Francisco. The city of West Sacramento comprises approximately 14,912 acres (23.3 square miles) and is a mix of residential, agricultural, industrial, open space, and commercial lands.

Yolo County has a long history of agricultural production, and the California Department of Conservation inventoried 390,250 acres of designated important farmland in the county in 2006, out of a total county area of 653,451 acres. Of these, 257,893 acres were designated as prime farmland, 16,989 acres as farmland of statewide importance, 50,197 acres as unique farmland, and 43,213 acres as farmland of local importance (California Department of Conservation 2008b).

3.11.2.2.1 Levee Reach Land Use

A description of the land use associated with each levee reach in the study area is presented below. Figures 3.11-1 and 3.11-2 present the City of West Sacramento zoning map and the City of West Sacramento important farmland map, respectively.

Sacramento River North Levee

The Sacramento River North Levee is located on the northern and northeastern sides of the city of West Sacramento, along the Sacramento River. Land uses along the levee are diverse and include the following zoning designations: agricultural, public open space, multiple family residential, single family residential, recreation/parks, public/quasi public, and waterfront. These lands include the Bryte Bend Water Treatment Plant, Bryte Park, Riverbank Elementary School, Bryte Elementary School, Yolo County Park, the City of West Sacramento Department of Public Works and the CHP Academy. This reach contains no lands that are listed by the Farmland Mapping and Monitoring Program (FMMP) as important farmland. A small strip of land at the northern terminus of the levee has been designated by the City as agricultural; however, it is not considered important farmland by FMMP (California Department of Conservation 2008b).

Sacramento River South Levee

The Sacramento River South Levee is located in the southeastern portion of the city of West Sacramento, along the Sacramento River. Land uses along the levee are primarily public open space, residential, single family residential, and rural residential. The area is largely undeveloped; however, recreation/parks, waterfront, agricultural, and commercial water-related uses occur along the levee. The agricultural lands are located adjacent to the southern end of the levee. FMMP has designated several areas within 500 feet of the Sacramento River South Levee as prime farmland, totaling 175 acres. Large sections of this prime farmland acreage lie between Linden Road and Davis Road, and a section runs from Oak Hall Bend to the South Cross Levee (California Department of Conservation 2008b).

Port North Levee

The Port North Levee extends from the western side of the city to the eastern side, running along the northern bank of the northern extent of the DWSC, the Port of West Sacramento, and the barge canal. Land uses adjacent to the levee are primarily industrial-waterfront, although public open space, industrial-heavy, public-quasi public, business park, residential, and waterfront zones are also located adjacent to the levee. Most of the development along this reach is related to the Port of West Sacramento. The residential zone is located near the portion of the levee that runs between Industrial Boulevard and Jefferson Boulevard. This reach contains no lands that are listed by FMMP as important farmland (California Department of Conservation 2008b).

Port South Levee

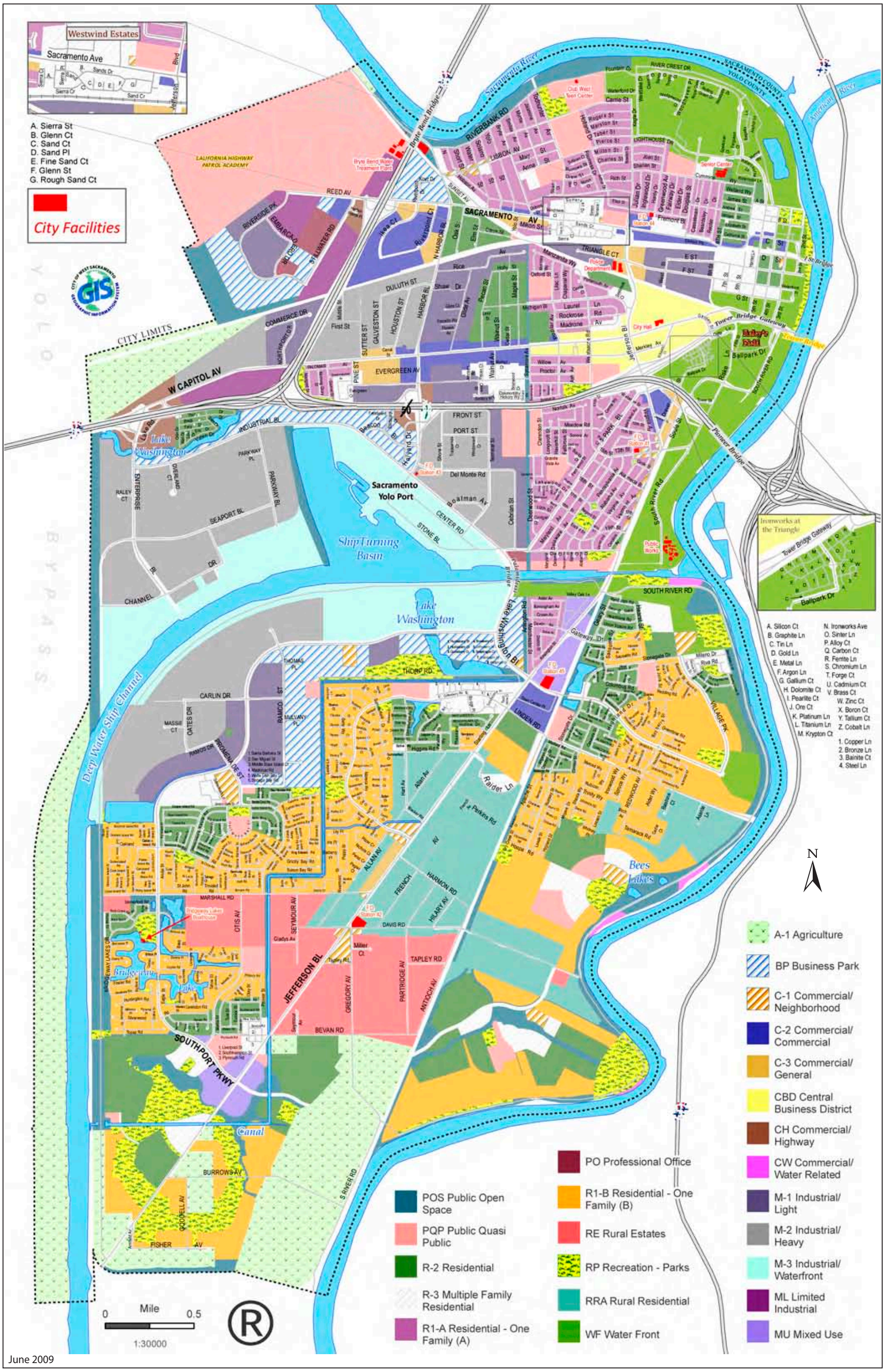
The Port South Levee extends from the western side of the city to the eastern side, running along the southern bank of the DWSC and the barge canal. Land uses adjacent to the levee are primarily industrial-waterfront, although public open space, industrial-heavy, waterfront, recreation/parks, and commercial water-related zones are also located adjacent to the levee. The lands in this reach are largely undeveloped, with the exception of a residential neighborhood located between Jefferson Boulevard and Lake Washington Boulevard, south of the barge canal. Access to the Barge Canal Recreation Area is also located along the Port South Levee. This reach contains no lands that are listed by the FMMP as important farmland (California Department of Conservation 2008b).

South Cross Levee

The South Cross Levee constitutes the southern edge of the city limits for West Sacramento, and runs east to west from the DWSC to the Sacramento River. Land uses adjacent to the levee are designated almost entirely as agricultural, although there is a small strip designated as public open space that runs along the western half of the levee. The area adjacent to the levee is undeveloped, with the exception of a few agriculture-related buildings and residences. This reach contains 29 acres of FMMP designated prime farmland within 500 feet of the north side of the levee. Additionally, 36 acres of prime farmland and 5 acres of farmland of statewide importance are within 500 feet of the south side of the levee (California Department of Conservation 2008b).

DWSC West Levee

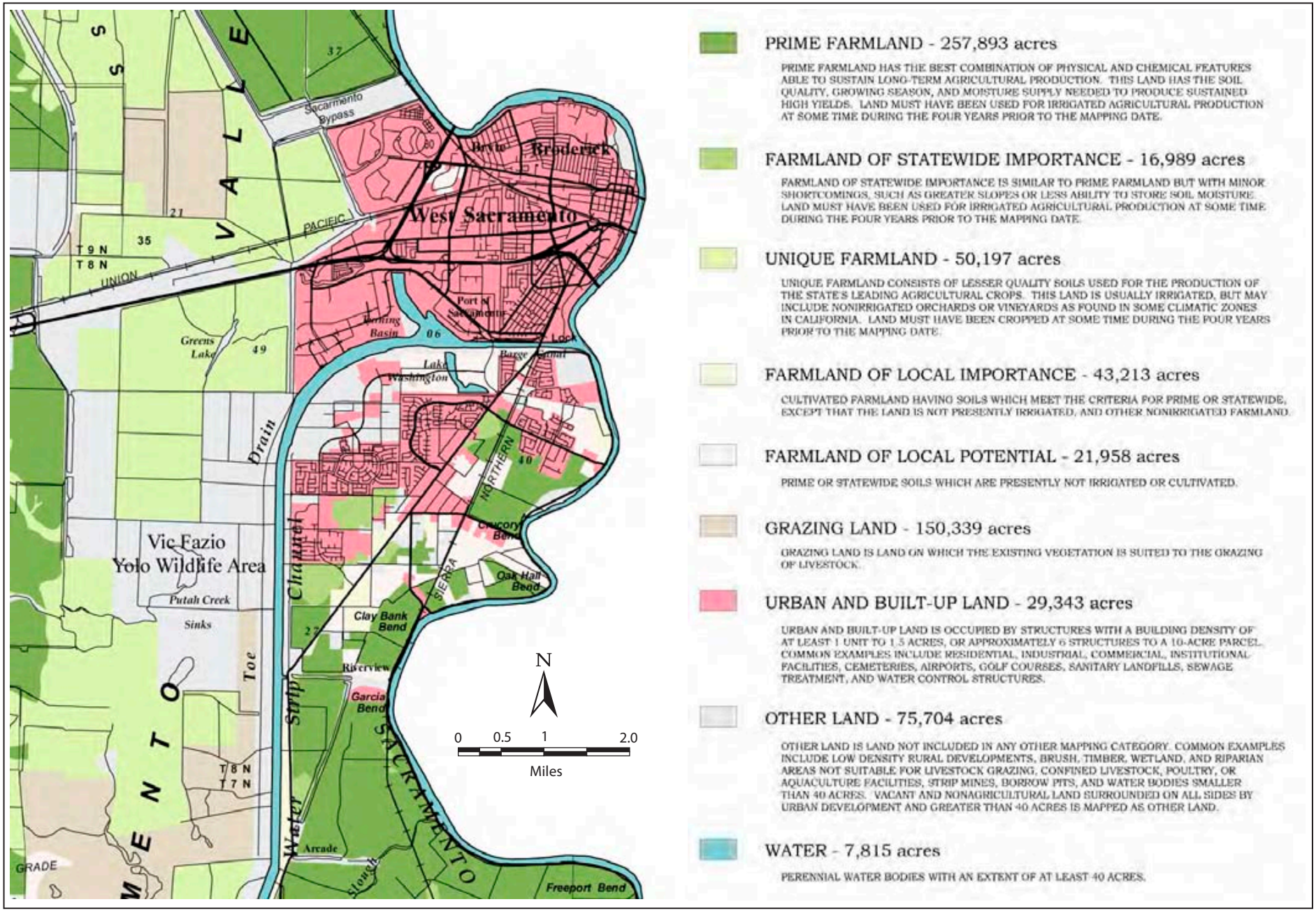
The DWSC West Levee runs north to south along the western border of the DWSC. The levee begins just southwest of the Port of West Sacramento and continues south to Liberty Island in the Delta.



00875.07 EIR (8-09)

June 2009

Figure 3.11-1
City of West Sacramento Zoning Map



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Figure 3.11-2
City of West Sacramento Important Farmland

The only lands adjacent to the levee that lie within the city limits of West Sacramento are located along the northernmost 3 miles of the levee and are zoned as agricultural lands by the City.

Lands south of the city limits that are adjacent to the levee are part of Yolo and Solano Counties and consist primarily of the Yolo Bypass. Lands within the Yolo Bypass in Yolo County are designated as open space, with the exception of a tract of land that is under Williamson Act contract. Open space lands include The Vic Fazio Yolo Wildlife Area (southwestern corner of the West Sacramento city limits) and The North Central Valley Wildlife Management Area (south of the city of West Sacramento). The reach contains lands that have been designated by FMMP as farmland of local importance along various portions of the levee (California Department of Conservation 2008b). Williamson Act lands are located near the levee at the southwestern corner of the city limits; however, these lands are located outside the area of potential direct effect for the program.

Lands within this reach that fall within Solano County are designated as agricultural (Solano County 2008). However, there are no FMMP lands designated as important farmland along the portion of the levee that is located in Solano County (California Department of Conservation 2008a).

This reach also has land that is located within the primary zone of the Delta, as designated by the Delta Protection Commission.

DWSC East Levee

The DWSC East Levee runs from near the north end of the DWSC to the southern edge of the city limits, along the eastern bank of the DWSC, which is on the western edge of the city. Land uses adjacent to the levee are designated as public open space, public-quasi public, residential, single family residential, rural estates, and recreation/parks, with agricultural land located along the southern portion of the levee. The residential areas are located adjacent to the northern half of the levee. This reach contains no lands that are listed by the FMMP as important farmland (California Department of Conservation 2008b).

Yolo Bypass Levee

The Yolo Bypass Levee is located along the Yolo Bypass on the northwestern edge of the city. Land uses adjacent to the levee are designated by the City primarily as public open space, industrial-heavy, and agricultural. There are also some areas zoned as business park, industrial-water front, commercial-highway, and public/quasi-public. The CHP Academy is located adjacent to the northern section of the levee. The land designated by the City as agricultural is located on the western side of the levee. The industrial areas are located along the southern portion of the levee, near the Port of West Sacramento and the DWSC. The reach contains 4 acres of land that has been designated by FMMP as unique farmland along the western side of the levee, outside the city limits of West Sacramento (California Department of Conservation 2008b).

Sacramento Bypass Levee

The Sacramento Bypass Levee is located along the northern city limits on the southern edge of the Sacramento Bypass. Land adjacent to the levee consists of the CHP Academy, designated entirely as public/quasi-public. The CHP Academy consists of a driving course, associated structures, firing range, and open space. The reach does not contain lands designated by FMMP as important farmland (California Department of Conservation 2008b).

3.11.3 Environmental Consequences

This section describes the potential effects on land use and agriculture from implementation of the proposed program. It describes the assessment methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) these significant effects accompany each discussion.

3.11.3.1 Assessment Methods

Effects on land use and agriculture were evaluated based on a review of the regulatory setting above, review of the program in regard to compliance with Federal, state and local land use plans and regulations, and field observations.

3.11.3.2 Determination of Effects

For this analysis, an effect pertaining to land use and agriculture was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.).

3.11.3.2.1 Land Use

For the purposes of this analysis, effects on land use are considered significant if implementation of the proposed program would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

3.11.3.2.2 Agriculture

For the purposes of this analysis, effects on agriculture are considered significant if implementation of the proposed program would:

- convert prime farmland, unique farmland, or farmland of statewide importance;
- conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- involve other changes in the existing environment, which because of their location or nature, could result in conversion of farmland to non-agricultural use.

The program would be considered to have a significant effect on important farmland (i.e., prime farmland, unique farmland, farmland of statewide importance) if it would result in an irretrievable conversion of a substantial acreage of such land. An irretrievable conversion is one that involves the conversion of land to uses that would cause serious degradation of the quality of soils and/or result in expenditures of substantial development costs that likely would preclude the practicality of future conversion back to agriculture. Implementation of the program would not physically divide an established community. There would be no conflict with any applicable habitat conservation plan or natural community conservation plan, as none covers areas located within the study area.

Additionally, there would be no conflict with a Williamson Act contract because no Williamson Act lands are located within the study area. Therefore, the first, third, and fifth criteria do not apply to the program and are not considered further.

3.11.3.3 Effects and Mitigation Measures

3.11.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue. Without implementation of the program, there would be no changes to zoning designations in the city of West Sacramento, and there would be no intentional conversion of Williamson Act, important farmland, or other agricultural land to an incompatible use.

Given levee conditions, the risk of levee failure would continue under the No Action Alternative. A flood event could have severe ramifications for agriculture and land use in West Sacramento. Flooding may cause inundation, erosion or sedimentation from high flows, destruction or damage to agricultural equipment, outbuildings and processing facilities, all of which could lead to reduction in agricultural productivity. This damage may cause depression of the agricultural economy and cause abandonment of or prolonged delay in cultivation of productive lands, which could ultimately result in a change in the use of these lands that may be difficult to reverse.

Similarly, levee failure could significantly change the land uses in urban areas, both temporarily and permanently, and result in the physical division of established communities. A period of months or years would be required for clean-up and repair after a large flood event, during which time the affected parcels would be temporarily unable to support their designated land uses. Damages sustained by residential, commercial, civic, and industrial areas inundated by flooding could be so great as to render the properties permanently unusable. Additionally, the cost of cleanup and repair after flooding could be too great to make restoring the current land use worthwhile, resulting in permanent changes to land use in West Sacramento and potential division of established communities.

3.11.3.3.2 Flood and Recreation Program Alternatives

Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction

During levee alternative and recreational element construction, a staging area to house offices, stockpiling areas to store soils, and staging areas to park equipment such as bulldozers, compactors, drill rigs, and excavators would be necessary. Temporary construction roads and ramps also could be built on site at specific project sites. Lands used for construction staging and stockpiling would be agricultural, vacant or undeveloped, and these lands would be returned to their original use following the completion of construction. If agricultural lands are required for long-term temporary staging and construction activities, these lands would likely represent only a small fraction of the total agricultural lands within Yolo or Solano County and production of these lands would resume after construction activities are complete. Thus, the proposed program would not result in significant effects on land use as a result of temporary land use changes. This effect is considered less than significant. No mitigation is required. Refer to Section 3.12, Socioeconomics and

Community Effects, for a discussion of effects related to compensation of agriculture-related income for temporary loss of use of farmlands.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Effect LU-1 would occur in all nine reaches. Temporary staging areas would be required for all of the flood and recreation alternatives.

Effect LU-1 Finding	With Mitigation
Less than significant	N/A

Effect LU-2: Change in Land Use Designations or Potential to Conflict with Land Use Designations as a Result of Construction

Implementation of levee alternatives that would extend the levee footprint landward could result in a change of land use designation to levee or levee access routes. However, the program proponent would follow a selection process for levee alternatives that would take into account criteria such as the need to purchase real estate and land use compatibility, among others. In some cases, the most appropriate treatment may require acquisition and a change in land use designation to a minimal amount of land within the city of West Sacramento or Yolo or Solano County to enable the construction and continued operation of levee alternatives. Nonetheless, the amount of change is not likely to result in the conversion or change of a substantial amount of any land use designation within the study area.

With the exception of the recreation trail on the South Cross Levee, program recreation alternatives would take place in areas that allow for public/quasi-public use and would have no effect on land use. The proposed South Cross Levee recreation trail would be constructed on land that is currently under private ownership. However, this re-designation of private land to public use is planned for in City of West Sacramento's Parks Master Plan and therefore would not conflict with existing land use plans. Therefore, these effects are considered less than significant. No mitigation is required.

Refer to Section 3.12, Socioeconomics and Community Effects, for a discussion of effects related to compensation for loss of lands or loss of agriculture-related income resulting from permanent loss of use of farmlands.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (adjacent)	▪ Slope flattening
	▪ Levee raise (full)	▪ Stability berm
	▪ Seepage berm	▪ Setback levee

Affected Reaches

Effect LU-2 would occur in the Sacramento River North, Sacramento River South, Port South, South Cross, DWSC West, DWSC East, Yolo Bypass, and Sacramento Bypass Levee reaches. These reaches all have levee treatment options that could result in an increase in the levee footprint.

Effect LU-2 Finding	With Mitigation
Less than significant	N/A

Effect LU-3: Important Farmland Converted to Non-Agricultural Uses

It is anticipated that several staging areas and temporary-access haul roads would be developed on agricultural lands in the study area during program construction. Land at construction staging areas and haul roads classified as important farmland could be temporarily taken out of production for the duration of the construction period to accommodate pre-construction and construction activities. These areas would be returned to pre-program conditions, and agricultural uses could resume once construction is completed. Therefore, there would be no direct conversion of important farmland to non-agricultural uses in construction staging areas.

However, certain reaches of the study area are located adjacent to important farmland, as designated by the FMMP. Implementation of several program treatments (e.g., setback levees, adjacent levee raises, slope flattening) would result in a relatively small permanent loss of important farmland acreage in the city of West Sacramento, with the loss occurring in the area immediately adjacent to the levee reaches. These types of treatments would result in the conversion of important farmland to an incompatible use, with a setback levee converting the most land—111 acres. This acreage accounts for approximately 0.0284% of the 390,250 acres of important farmland in Yolo County. Compared to the amount of important farmland that still would be available for agricultural production, the amount converted by the program would be negligible. Additionally, implementation of recreational elements of the program would not result in the conversion of any important farmland. Therefore, this effect is considered less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Levee raise (adjacent) ▪ Levee raise (full)	▪ Slope flattening ▪ Stability berm ▪ Setback levee

Affected Reaches

Effect LU-3 would occur in the South Cross, DWSC East, and Sacramento River South Levee reaches. Agricultural land within the city limits is confined to the southern portion of the city.

Effect LU-3 Finding	With Mitigation
Less than significant	N/A

Section 3.12

Socioeconomic and Community Effects

3.12.1 Introduction

This section describes the regulatory and environmental setting for socioeconomic conditions, including employment, agricultural production, population, and housing; the effects on socioeconomic and community conditions that would result from the program, and mitigation measures that would reduce significant effects.

The key sources of data and information used in the preparation of this section are listed below.

- California Department of Finance City/County Population and Housing Estimates (California Department of Finance 2009a, 2009b, 2009c)
- California Department of Water Resources Land Use Survey (California Department of Water Resources 1997)
- California Employment Development Department El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba, and Solano County Local Area Profiles (California Employment Development Department 2009a, b, c, d, e, f, and g)
- *City of West Sacramento General Plan Policy Document* (City of West Sacramento 2004)
- *City of West Sacramento General Plan Background Document* (City of West Sacramento 2000)
- *Solano County Department of Agriculture 2008 Crop and Livestock Report* (Solano County Department of Agriculture 2008)
- U.S. Census Bureau QuickFacts (U.S. Census Bureau 2009a, 2009b, 2009c)
- *Yolo County 2008 Agricultural Crop Report* (Yolo County Department of Agriculture 2008)

3.12.2 Affected Environment

3.12.2.1 Regulatory Setting

3.12.2.1.1 Federal

Uniform Relocation Assistance and Real Property Acquisition Policies Act

Federal, state, and local government agencies, and other agencies receiving Federal financial assistance for public programs and projects that require the acquisition of real property, must comply with the policies and provisions set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987 (42 USC 4601 *et seq*.) (Uniform Act), and implementing regulation, Title 49 CFR Part 24. Relocation advisory services, moving cost reimbursement, replacement housing, and reimbursement for related expenses and rights of appeal are provided for in the Uniform Act.

Property acquisition and relocation services, compensation for living expenses for temporarily relocated residents, and negotiations regarding any compensation for temporary loss of business would be accomplished in accordance with the Uniform Act and California Government Code Section 7267, *et seq*. (see discussion below).

3.12.2.1.2 State

Relocation Assistance and Property Acquisition

The State of California's Government Code Section 7260, *et seq*. brings the California Relocation Act into conformity with the Federal Uniform Act. In the acquisition of real property by a public agency, both the Federal and state acts seek to (1) ensure consistent and fair treatment of owners of real property, (2) encourage and expedite acquisition by agreement to avoid litigation and relieve congestion in the courts, and (3) promote confidence in public land acquisition.

The Relocation Assistance and Real Property Acquisition Guidelines were established by 25 CCR 1.6. The guidelines were developed to assist public entities with developing regulations and procedures for implementing 42 USC 61—the Uniform Act, for Federal and federally assisted programs. The guidelines are designed to ensure that uniform, fair, and equitable treatment is given to people displaced from their homes, businesses, or farms as a result of the actions of a public entity. Under the Uniform Act, persons required to relocate temporarily are not considered "displaced," but must be reimbursed for all reasonable out-of-pocket expenses. In accordance with these guidelines, people will not suffer disproportionate injury as a result of action taken for the benefit of the public as a whole. Additionally, public entities must ensure consistent and fair treatment of owners of such property, and encourage and expedite acquisitions by agreement with owners of displaced property to avoid litigation.

Property acquisition and relocation services, compensation for living expenses for temporarily relocated residents, and negotiations regarding any compensation for temporary loss of business would be accomplished in accordance with the Uniform Act (see discussion above) and California Government Code Section 7267, *et seq*.

General Plans

State law requires each city and county to adopt a general plan for its future growth. This plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet those needs. At the state level, the Housing and Community Development Department estimates the relative share of California's projected population growth that will occur in each county presented by the Department of Finance's demographic research unit.

Each city and county must update its general plan housing element on a regular basis (usually every 5 years). Among other things, the housing element must incorporate policies and identify potential sites that would accommodate the city's and county's share of the regional housing need. Prior to adopting a general plan update for housing, the city or county must submit the draft to the Housing and Community Development Department for its review. The Housing and Community Development Department will take action to advise the local jurisdiction whether its housing element complies with provisions of California Housing Element Law. The *City of West Sacramento General Plan Housing Element* was last updated in 1992, but is currently undergoing an update process.

3.12.2.1.3 Local

City of West Sacramento General Plan

The *City of West Sacramento General Plan* was adopted by the City in 1990. Although the 1990 general plan contains policies related to housing and economics, these policies are out of date in light of the significant amount of development that has occurred over the past 20 years. The City is in the process of updating the general plan, which is expected to be complete in 2009. The new general plan will guide the city's growth through 2030. The *General Plan Issues and Opportunities Report*, published in June 2008, identified the following areas of focus related to housing and economics:

- designating higher densities at appropriate locations to support transit,
- promoting mixed-use development,
- maintaining rural residential land in the southern area,
- promoting tourism,
- increasing the number of good-paying jobs (especially in Southport), and
- addressing telecommunication infrastructure.

3.12.2.2 Environmental Setting

3.12.2.2.1 Sacramento Region

Employment

Much of the WSLIP study area is considered part of the greater Sacramento metropolitan region. The Sacramento Area Council of Governments defines the Sacramento metropolitan region as the area encompassing El Dorado, Placer, Sacramento, Sutter, Yolo and Yuba counties. The Sacramento region's economy is broadly based. Government and transportation are the largest sectors of employment in the area. Agriculture and mining—which were historically huge drivers of the Sacramento region's economy—are still strong contributors, but have been surpassed as leading industries by information, technology service, leisure and hospitality, education and health services, and construction. Total taxable sales for 2007 within the six-county Sacramento region topped $35 billion. (California Employment Development Department 2009a, b, c, d, e, and f.)

Technology-related companies such as Intel and Hewlett-Packard are among the Sacramento area's largest employers; proximity to research centers and a well-educated labor pool have drawn such companies to the area. Sacramento's fastest-growing employment areas include financial activities, professional and business services, and education and health services. The California Employment Development Department estimates that as of August 2009, the total labor force in the Sacramento region was approximately 1,135,200, with a 12.2% unemployment rate. (California Employment Development Department 2009a, b, c, d, e, and f.)

3.12.2.2.2 Yolo County

Employment

With its affordable housing and land and its easy access to highway, rail, water and air transportation, Yolo County has an attractive business climate. The primary business sectors are government; professional and business services; transportation, warehousing, and utilities; and agriculture (LSA Associates, Inc. 2009). The largest employers in the county are the University of California Davis, Cache Creek Casino Resort, the U.S. Postal Service, and the State of California (Yolo County 2009). Total retail taxable sales in the county in 2007 were $3,259,843,000 (California Employment Development Department 2009e).

Yolo County has a population of 200,709 (California Department of Finance 2009a). The labor force is 98,200, with 87,900 people employed and 10,300 unemployed; an unemployment rate of 10.5% (California Employment Development Department 2009e). The median household income is $55,988 and the per capita income is $19,365 (U.S. Census Bureau 2009a).

Agricultural Production

Yolo County has a long agricultural heritage and, as recently as its current general plan update, has historically set policies that preserve agriculture. Almost 99% of the county's unincorporated land (621,224 acres) is designated for agricultural use (Yolo County 2008). The 2008 Yolo County Agricultural Crop Report indicates that Yolo County's total agricultural production in 2008 was $527,330,803. This is an increase of more than 16% over 2007 yields. The top- producing crops were tomatoes, alfalfa, rice, wine grapes, and seed crops (Table 3.12-1). It should be noted that these figures represent crop values only, and do not take into account other agricultural contributions to the economy such as field labor, processing, transport, marketing, and other services. When these factors are also considered, agriculture contributes over $1.5 billion to the Yolo County economy. (Yolo County Department of Agriculture 2008.)

Table 3.12-1. Crop Yields and Values for Top-Producing Crops (and Corn and Grain) in Yolo County, 2008

	Total Tonnage Produced	Value per Ton	Total
Alfalfa	387,896	$189.24	$73,405,515
Corn (field)	44,730	$152.19	$6,807,486
Grain	53,969	$179.11	$9,666,518
Rice	105,104	$521.32	$54,792.829*
Rice, wild	3,415	$1,684.17	$5,751,816
Tomatoes	1,528,882	$68.76	$105,124,614
Wine grapes (black)	17,333	$597.72	$10,360.047
Wine grapes (white)	60,069	$526.83	$31,645,542
Seed crops (total)	24,135	Not available	$31,952,413

Source: Yolo County Department of Agriculture 2008.
* Includes Federal rice payment.

The Sacramento Area Council of Governments envisions that, because of its commitment to agriculture and natural resources, Yolo County will grow at a slower rate compared to the rest of the

region. Local retail and office jobs will expand, while industrial jobs will decline (Sacramento Area Council of Governments 2004).

3.12.2.2.3 West Sacramento

Employment

West Sacramento attracts business with an accessible and cooperative government; access to multi-modal transportation (highway, rail, and port); a regional workforce of over one million people; and low business costs (City of West Sacramento Economic Development 2009). The city's economy is moving from a climate that was historically focused the on the transportation and warehouse sectors toward newer industries such as biotech, green energy, and green technology (Mintier & Associates 2008). West Sacramento had an 89% employment growth rate between 1990 and 1999, which is the third highest growth rate of any city in the Sacramento region (City of West Sacramento Economic Development 2009). The top employers are the United Parcel Service, the U.S. Postal Service, Nor-Cal Beverage, and Raleys/Bel Air. The City is targeting the following industries in its *City of West Sacramento General Plan Update* (Mintier & Associates 2008):

- biotechnology/life sciences,
- clean energy and green technology,
- food processing,
- manufacturing,
- retail, and
- small business.

The City's retail business greatly expanded over the last 4 years with the store openings of IKEA, Wal-Mart, Target, Home Depot, Lowe's, and Nugget Market. West Sacramento now has a higher sales-to-income ratio than surrounding communities and the region as a whole (Mintier & Associates 2008). Table 3.12-2 shows West Sacramento's largest private employers.

The Sacramento Area County of Governments envisions that West Sacramento will be the fastest growing city in the region because of its proximity to Sacramento's urban core and many opportunities for reinvestment. Major job growth will be in the retail and office sectors, with less growth in the industrial sector than in the past. (Sacramento Area Council of Governments 2004.)

Table 3.12-2. West Sacramento's Largest Private Employers

Company Name	
United Parcel Service (UPS)	All Phase Security, Inc.
U.S. Postal Service	Bytheways Manufacturing Inc.
Nor-Cal Beverage	Clark Pacific
Raley's/Bel Air	Hunter Douglas
Fed-Ex Freight West, Inc.	Siemens Healthcare Diagnostics
Xyratex International	KOVR TV 13
C & S Wholesale Grocers	Idexx Veterinary Services
First Health Group Corporation	Capital Coors Company

Company Name	
Wal Mart	Consolidated Procurement Services
Prologix Distribution Services	Farmer's Rice Cooperative
Tony's Fine Foods	IKEA
Citibank	Lowe's
Roadway Express	

The City of West Sacramento has a population of 47,782 (California Department of Finance 2009a) and employs 30,655 people (Sacramento Area Council of Governments 2008a). The unemployment rate is 9.5% (California Employment Development Department 2009e). The median household income is $31,718 and the per capita income is $15,245 (U.S. Census Bureau 2009b).

Agricultural Production

The *City of West Sacramento General Plan* designates two areas within the city as agricultural: the area of Southport generally south of Bevan Road and a small part of the Yolo Bypass at the western edge of the city, immediately north of West Capitol Avenue and south of the Southern Pacific tracks (LSA Associates 2009). These areas, in addition to areas with other general plan designations, are currently used for farming (California Department of Water Resources 1997). A very conservative estimate of currently-farmed acreage located within the program footprint is 570 acres.

According to the most recently available DWR Land Use maps, the majority of the land in West Sacramento currently in agricultural production is planted in corn, grain, and alfalfa (California Department of Water Resources 1997). Alfalfa is the second highest-grossing crop in both Yolo and Solano Counties (Table 3.12-3). Grain and corn crops are much smaller overall producers in both counties (Yolo County Department of Agriculture 2008; Solano County Department of Agriculture 2008).

Table 3.12-3. Annual Yields and Values for Crops Grown in West Sacramento

	Tonnage per Acre	Value per Ton	Value per Acre
Corn (field)	5.51	$152.19	$838.57
Grains	3.21	$179.11	$574.94
Alfalfa	6.84	$189.24	$1,294.40

Source: Yolo County Department of Agriculture 2008.

The Port of West Sacramento is an inland port that has historically served the agricultural industry. In 2005, the City of West Sacramento assumed leadership of the port and has since broadened the port's duties to include green cargo (specialized cargo that enhances the environment) (City of West Sacramento 2009a). There are thousands of jobs associated with the port and related movement of goods via truck, rail, and ship (City of West Sacramento 2009b). Due to increased worldwide demand for rice, the port expects to export about 339,000 metric tons of bagged rice this year—about double its normal capacity (The Cunningham Report 2009). President Obama's proposed 2010 Civil Works budget includes $10 million for widening the DWSC that leads to the port. Deepening the DWSC would almost double the number of fully loaded oceangoing freight ships able to access the Sacramento region (Port of West Sacramento 2009).

Population

The City of West Sacramento is the third largest city in Yolo County and is currently experiencing strong, steady growth (Yolo County 2009). The City incorporated in 1987, combining the former communities of Bryte, Broderick, West Sacramento, and Southport. Southport is home to newer residences and Bryte and Broderick have higher percentages of pre-WWII homes. The U.S. Census reports that the population in West Sacramento was 31,615 in 2000 (U.S. Census Bureau 2009b). According to the California Department of Finance the estimated population of residents in West Sacramento in January 2009 was 47,782, a 1.9% increase over 2008 and 51% increase since 2000 (California Department of Finance 2009c).

As a point of reference for the city, information about population in Yolo County is presented here. Yolo County's population is currently 200,709, an increase of 1.2% over last year (California Department of Finance 2009b), and approximately 17.2% over 2000 (U.S. Census Bureau 2009a). Over 88% of Yolo County's population lives in its four incorporated cities—West Sacramento, Davis, Woodland, and Winters. The remaining 12% live in unincorporated areas of the county (Yolo County 2008).

Housing

As the population of West Sacramento grows, the city's housing stock is growing as well. The California Department of Finance estimates that there are currently approximately18,550 total housing units in the city, which is an increase of approximately 50% over the number of housing units in 2000 (California Department of Finance 2009c; U.S. Census Bureau 2009b). An unofficial vacancy rate estimate for the city in 2009 is 5.5% (Sperling's Best Places 2009).

As a point of reference for the city, information about housing in Yolo County is presented here. The California Department of Finance estimates that there are currently approximately 73,811 housing units in Yolo County, an increase of approximately 20% over 2000 levels (California Department of Finance 2009c; U.S. Census Bureau 2009a).

3.12.2.2.4 Solano County

Employment

Solano County's primary business sectors are health and educational services; arts, recreation, and other services; and retail. The top county employers are Kaiser Permanente, Six Flags Discovery Kingdom, NorthBay Healthcare System, and Alza (Solano County Administrator's Office 2007). Table 3.12-4 shows Solano County's largest employers. Total taxable sales in the county in 2007 were $6,277,832,000 (California Employment Development Department 2009g).

Solano County has a population of 426,729 (California Department of Finance 2009a). The labor force is 213,700, with 190,800 employed people and 22,900 unemployed. The unemployment rate is 10.7%. There are 122,600 total wage and salary jobs. (California Employment Development Department 2009g.) The median household income is $66,575, and the per capita income is $21,731 (U.S. Census Bureau 2009c).

Table 3.12-4. Solano County's Largest Employers

Company Name	Employees
Kaiser Permanente (Vallejo/Vacaville/Fairfield)	3,912
Six Flags Discovery Kingdom (Vallejo)	1,500
NorthBay Healthcare System (Fairfield)	1,480
ALZA Corporation (Vacaville)	1,000
Genentech (Vacaville)	950
Wal-Mart (Vacaville/Fairfield/Dixon)	872
Sutter Solano Medical Center (Vallejo)	674
Westamerica Bancorporation (Fairfield)	542
Valero Refining Company—CA (Benicia)	480
Anheuser-Busch Brewery (Fairfield)	465
Albertson's Distribution Center (Vacaville)	450
Travis Credit Union (Vacaville)	420
CSK Auto Incorporated (Dixon)	400
Jelly Belly Candy Company (Fairfield)	400
TIMEC Company (Vallejo)	400

Source: Solano County Administrator's Office 2007.

Agriculture

Solano County's agricultural production is ranked 27th in the state. Almost 99% of the county's unincorporated land (621,224 acres) is designated for agricultural use. The 2008 Solano County Agricultural Crop and Livestock Report indicates that Solano County's total agricultural production in 2008 was $292,840,200. This is an increase of more than 9% over 2007 yields, and an all-time high for the county. The top-producing crops were nursery crops, alfalfa, and tomatoes (Table 3.12-5). It should be noted that these figures represent crop values only, and do not take into account other agricultural contributions to the economy such as field labor, processing, transport, marketing, and other services. When these factors are also considered, agriculture greatly benefits the Solano County economy. (Solano County Department of Agriculture 2008.)

Table 3.12-5. Annual Yields and Values for Crops Grown in Solano County, 2008

	Tonnage per Acre	Value per Ton	Total
Nursery crops	Not available	Not available	$43,056,300
Alfalfa	212,663	$202	$42,889,900
Tomatoes	417,900	$71.43	$29,850,600

Source: Solano County Department of Agriculture 2008.

3.12.3 Environmental Consequences

This section describes the analysis of effects relating to socioeconomics for the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.12.3.1 Assessment Methods

Potential effects on socioeconomic conditions related to construction and/or operation of the WSLIP are considered at a program level. Effects on socioeconomics related to implementation of the WSLIP were evaluated qualitatively, based on the criteria below. Additionally, the proposed program was evaluated for consistency with relevant local plans and policies at the Federal, state, and local levels.

3.12.3.2 Determination of Effects

For this analysis, an effect pertaining to socioeconomics was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.).

- a substantial change in employment;
- inducement of substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure); or
- displacement of substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

3.12.3.2.1 Effect Assumptions

Several of the alternatives proposed under the program would require land acquisition and may require removal of residences to accommodate the expanded footprint of the levee system. Land acquisition may be necessary for implementation of adjacent levee raises, full levee raises, relief wells, seepage berms, slope flattening, stability berms, and setback levees. In addition, sufficient land would need to be acquired to establish an appropriate maintenance corridor at the landside toes of all improved levees. Acquisition and relocation services, as well as compensation for living expenses for temporarily relocated residents, would be conducted in compliance with Federal and state relocation laws, which are the Uniform Act of 1970 (42 USC 4601 et seq.) and implementing regulation, 49 CFR Part 24; and California Government Code Section 7267 *et seq.* These laws require that appropriate compensation be provided to displaced landowners and tenants, and that residents be relocated to comparable replacement housing. More details regarding these regulations are provided above in the Regulatory Setting section. There is sufficient available housing stock for rent and purchase to accommodate displaced residents from these residences. Therefore, no new construction would be required to achieve the relocation of residents.

3.12.4 Effects and Mitigation Measures

3.12.4.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection, resulting in continued or even potentially increased risk of catastrophic flooding of the city. Current levee operations and maintenance activities would continue. No construction-related effects would occur.

Without implementation of the program, there would be no changes in existing population or employment but for the changes currently planned for in the appropriate local and state planning documents. No displacement of existing residences to accommodate an expanded levee footprint for certain levee alternatives would occur. However, the risk of levee failure would continue.

3.12.4.1.1 Consequences of Levee Failure

Should a levee failure and associated flooding occur, there could be widespread temporary and permanent displacement of residents. Damages suffered from flooding could lead to the long-term disruption of industrial, agricultural and retail economic activities within the city of Sacramento. Dependent on the degree of damage caused, disruption of activities could lead to a reduction in employment and short- to long-term depressed economic conditions resulting from damage to industrial, retail and agricultural facilities and major transportation facilities that support their activities. These effects are explored in more detail below.

Levee failure and subsequent flooding of the city of West Sacramento would affect the entire city, causing substantial damage to structures, contents, and other property such as landscaping and automobiles. As described in Chapter 2, Alternatives, a population of 40,439 lives in 15,448 housing units within the city (Sacramento Area Council of Governments 2008b and 2008c). All of these residents could be displaced by a catastrophic flood event. Additionally, the city is home to 30,655 jobs (Sacramento Area Council of Governments 2008a), 734 commercial and industrial structures, 46 public structures and 27 park facilities, all of which would be affected by a flood event (HDR, Inc. 2009). Agricultural operations could also sustain major damage in a flood event; 22.6% of the land area within the city is either farmland or open space (City of West Sacramento 2009c). Depending on flood event depths, land damages are estimated to be up to $237,763,648 and structural damages could be up to $1,750 ,118,102 (PB 2007).

During the recovery period after a flood event, West Sacramento residents would require temporary housing, and displacement of many or all occupants would occur while levees, buildings, and other infrastructure were repaired. Businesses, social services, and other employers occupying affected structures would be forced to relocate. The potential number of displaced residents (over 40,000) and businesses (over 30,000 jobs) is so large that the demand for temporary quarters would likely exceed the available supply of vacant buildings surrounding the West Sacramento area. Thus, many displaced residents and businesses may be forced to relocate to areas a considerable distance from West Sacramento, resulting in substantial intermediate-term and long-term economic impacts to the West Sacramento area. These impacts include changes in employment numbers and patterns, changes in business and personal incomes, changes in tax revenues, and changes in regional economic activity.

A flood event in West Sacramento would also disrupt state and interstate highway, rail, and shipping traffic, causing long-term effects on the region's and the state's economy. West Sacramento has one of the most comprehensive transportation networks on the west coast. Its central geographic location and extensive north-south and east-west highway access has made it a major distribution center. High volumes of truck traffic pass through the city on I-80 and US 50/Business 80 every day, with truck traffic transporting approximately $63 billion worth of cargo annually through West Sacramento (HDR, Inc. 2009). Major transcontinental rail lines passing through the city provide commercial and passenger rail service to all parts of the nation, and the Port of West Sacramento runs domestic and international shipping services (City of West Sacramento 2009). Approximately 9.3 million tons of rail freight valued at approximately $5 billion travels through West Sacramento annually (HDR, Inc. 2009). Flooding of this transportation and distribution infrastructure would cut off major statewide and interstate commerce corridors and cause severe statewide economic effects.

These flood-related effects on population, housing, and socioeconomic conditions would be significant. Post-flooding conditions could result in short-term increases in employment for post-flooding cleanup and restoration activities, but these increases would likely not offset the potential losses.

3.12.4.1.2 Consequences of Flood Map Modernization

Additionally, as described in Chapter 2, Alternatives, without implementation of the program, there is a high likelihood that FEMA would remap the city out of flood hazard Zone X, which would prevent or constrain further development in the city. Prevention of further development would interrupt the preferred regional "blueprint" for future growth through 2035 adopted by the Sacramento Area Council of Governments (SACOG) and Valley Vision in 2004. SACOG envisions that West Sacramento would be the fastest growing city in the greater Sacramento region over coming decades because of its proximity to Sacramento's urban core and its many opportunities for reinvestment. SACOG's blueprint anticipates that more than 40,000 new dwelling units and over 50,000 new jobs will be established in West Sacramento by 2050. With a change in flood hazard designation, these 40,000 new dwelling units and the commercial and industrial developments associated with 50,000 new jobs would need to be redirected to other areas in the region over the next four decades (Sacramento Area Council of Governments 2004), and would likely significantly stunt the area's economic growth.

3.12.4.2 Flood and Recreation Program Alternatives

Effect SOC-1: Effects on Residents

In some cases, construction activities would be directly adjacent or in close proximity to residents, resulting in disturbance, inconvenience, and other adverse effects on their day-to-day activities or home-life. Construction activities could result in significant effects in areas such as transportation, visual resources, noise, utilities and public services, and construction-related hazards. Construction activities could result in temporary road closures, construction-related noise occurring (potentially 24/7), lights and glare from nighttime lighting sources, and utilities temporarily disconnected for durations that could last weeks or months. Effects related to specific resource areas such as transportation, noise, visual resources, public utilities, and public health and hazards are discussed in more detail in their respective sections (3.5, 3.7, 3.14, 3.16, and 3.17). An example of where these situations may occur is the residences built on the levee and high ground along the Sacramento

River North Levee as well as those near the landside levee toe. Along this portion of the levee, there is very little space to simultaneously allow construction activities and normal ingress/egress to residences on the levee and high ground. In addition, construction activities alongside the landside levee toe would be close to residences adjacent to the levee. A similar situation could arise anywhere there are residences or buildings built on top of or directly adjacent to levees such as the Yolo Bypass Levee, South Cross Levee, Sacramento River South Levee, and the DWSC East Levee. In some situations, residents would need to temporarily vacate their homes because there is the potential for them to no longer have transportation access, construction noise levels would be too high, or utilities may be disconnected for durations too lengthy for convenient day-to-day living. In these cases, WSAFCA may offer that residents temporarily vacate their properties to allow for construction activities to take place and residents may return upon completion of construction activities. In other cases (such as construction near homes that are adjacent to a levee), it may not be possible to provide relocation for all residents, or residents may not desire to relocate temporarily.

Where possible, to reduce these overall effects on residents, WSAFCA will provide compensation for living expenses for temporarily relocated residents, in compliance with Federal and state relocation laws, which are the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601 *et seq.*) and implementing regulation, 49 CFR Part 24; and California Government Code Section 7267 *et seq.* In addition, WSAFCA would develop a Resident Relocation Plan as described in Section 2.9 of Chapter 2, Alternatives, which would outline the process for providing notice for relocation, coordinating relocating activities, and providing security for homes that are vacated, among other issues related to temporary relocation. These overall effects on residents are considered potentially significant and unavoidable. In some cases, compensating residents as well as developing a Resident Relocation Plan would reduce these overall effects to a less-than-significant level; however, some effects would still be significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of all alternatives could cause Effect SOC-1.

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Effect SOC-2 could occur in all nine program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levees.

Effect SOC-1 Finding	With Mitigation
Less than significant – Significant and unavoidable	N/A

Effect SOC-2: Loss of Agricultural Production and Employment

Several of the alternatives proposed under the program would require land acquisition to accommodate the expanded footprint of the levee system and/or parks system. WSAFCA would follow a selection process for levee alternatives that would take into account criteria such as the need to purchase real estate and land use compatibility, among others. However, if necessary, agricultural land adjacent to levees may be permanently acquired by WSAFCA and re-designated for flood control or other public use. As noted in Effect SOC-1, WSAFCA would comply with Federal and state laws regarding real property acquisition. Appropriate compensation for acquired land would reduce these effects on property owners to less than significant.

In addition, acquisition of agricultural land could cause currently farmed lands to be permanently taken out of production, resulting in the direct and indirect loss of employment within Yolo County.

The loss of employment would mainly be experienced by farmworkers and workers in the agricultural services sectors (e.g., farm equipment, seed, fertilizers, pesticides, gasoline).

For the purposes of this analysis, it is assumed that all currently farmed agricultural land (570 acres) within the program footprint could be permanently affected, and that all potentially affected agricultural land is producing the highest-yielding crop grown in West Sacramento (alfalfa). Under this scenario, the total annual crop yield lost as a result of the program would be roughly $738,000. This is less than one-fifth of one percent of Yolo County's total annual crop yield (which was $527,330,803 in 2008). However, WSAFCA would follow a selection process for levee alternatives that would take into account criteria such as the need to purchase real estate and land use compatibility, among others.

Changes in employment as a result of taking up to 570 acres of agricultural land out of production would not be significant in relation to the total employment in Yolo County and in the City of West Sacramento. This effect would be less than significant, and no mitigation is required.

Program Alternatives Associated with This Effect

Implementation of alternatives that expand the levee footprint and/or encroach into land that is in agricultural production could cause Effect SOC-2.

Program	Alternative	
Flood	▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Relief wells ▪ Seepage berm	▪ Slope flattening ▪ Stability berm ▪ Setback levee
Recreation	▪ Riverside parks	▪ Special projects

Affected Reaches

Effect SOC-2 could occur in four of the program reaches, depending on the flood program alternatives selected for those reaches. The reaches that could be affected are the Sacramento River South, South Cross, DWSC East, and Yolo Bypass Levee reaches. Although there is currently farmed land adjacent to the DWSC West Levee, it is assumed that the treatments selected in that reach would not affect any agricultural land.

Effect SOC-2 Finding	With Mitigation
Less than significant	N/A

Effect SOC-3: Temporary Disruption of Farming and Local Business Activity during Construction

Construction activities associated with implementation of the program have the potential to temporarily disrupt local farming activities and recreation-related businesses.

It is anticipated that several staging areas and temporary-access haul roads would be located on agricultural lands during construction. These lands would be temporarily taken out of production for the duration of the construction period. This is not anticipated to cause a substantial loss of employment, since the staging areas would affect a very small portion of currently farmed lands within the study area. These areas would be returned to pre-program conditions and agricultural production could resume once construction is completed. Additionally, as described in the environmental commitments outlined in Section 2.9 of Chapter 2, Alternatives, negotiations regarding any compensation for temporary loss of business/farm revenue would be accomplished in accordance with the Uniform Act and California Government Code Section 7267, *et seq*. The temporary effect on agriculture-related employment as a result of the location of staging areas is therefore considered less than significant. No mitigation is required.

As discussed in Section 3.15, Recreation, construction activities associated with implementation of the program have the potential to temporarily disrupt recreational activities in the study area. Although it cannot be quantified at this time, a disruption of recreational activities in the study area could lead to a corresponding indirect effect on recreation-related businesses in the area. These effects are anticipated to be minimal; however, WSAFCA would comply with Federal laws and state guidelines regarding compensation negotiations for temporary loss of business. This effect is considered less than significant.

Program Alternatives Associated with This Effect

Implementation of all alternatives could cause Effect SOC-3.

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Effect SOC-2 could occur in all nine program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levees. However, effects associated with temporary conversion of agricultural land to staging areas would be limited to the program reaches with adjacent agricultural land, which are the Sacramento River South, South Cross, DWSC East and West, and Yolo Bypass Levee reaches.

Effect SOC-3 Finding	With Mitigation
Less than significant	N/A

Effect SOC-4: Temporary Increase in Employment in the Region during Construction

Construction activities associated with implementation of the program would temporarily increase employment and personal income in the study area, including in the city and Yolo and Solano Counties, as well as within the greater Sacramento region. Employment during the construction period would increase directly as a result of the labor needed for construction activities. Employment in the study area would also increase indirectly as personnel involved in construction of the program spend their wages and salaries in the study area.

Preliminary cost estimates anticipate that total construction-related expenditures associated with the program would be between $486,732,000 and $776,001,000 (HDR, Inc. 2009) spread over 10 to 15 years. This is an estimate of direct costs only, and does not include indirect/induced changes in employment and personal income resulting from program construction.

Program construction would therefore benefit the local economy by temporarily increasing employment and personal income. However, those changes would be very small relative to the total economic activity in the study area and in the Sacramento region in general. Construction-related employment would represent a small fraction of total employment and personal income levels. The effect on employment is considered beneficial.

Program Alternatives Associated with This Effect

Implementation of all alternatives would cause Effect SOC-4.

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Effect SOC-4 would occur in all nine program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reaches.

Effect SOC-4 Finding	With Mitigation
Beneficial	N/A

Effect SOC-5: Continued Economic Development in the City of West Sacramento

Implementation of the program would reduce flood risks in the city, providing greater protection of life, property, and business pursuits. As described in Chapter 1, Introduction, the levees surrounding the city do not currently meet FEMA's minimum acceptable level of flood protection. Upgrading the flood protection of West Sacramento to a 200-year level would ensure that the city is not mapped into the floodplain on FEMA's Flood Insurance Rate Maps, thereby guaranteeing that no development restrictions or other impediments to growth are placed on the City by the Federal government. This will ensure that the City can move forward with the continued growth and economic development that is outlined in the City's 2008 *General Plan Issues and Opportunities Report*. This effect is considered beneficial.

Program Alternatives Associated with This Effect

Implementation of the entire program would cause Effect SOC-5. This could involve all proposed alternatives.

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal ▪ Seepage berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Effect SOC-5 would occur as a result of implementing the entire program. This would involve work in all nine program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reaches.

Effect SOC-5 Finding	With Mitigation
Beneficial	N/A

Section 3.13
Environmental Justice

3.13.1 Introduction

This section describes the regulatory and environmental setting for environmental justice, effects on low-income and minority populations that would result from the program and mitigation measures that would reduce significant effects.

The key sources of data used in the preparation of this section are listed below.

- *City of West Sacramento General Plan Policy Document* (City of West Sacramento 1990)
- U.S. Census Bureau QuickFacts (U.S. Census Bureau 2009a, 2009b, 2009c)

3.13.2 Affected Environment

3.13.2.1 Regulatory Setting

3.13.2.1.1 Federal

Executive Order 12898: Environmental Justice

Federal Executive Order 12898, Environmental Justice, requires that, to the greatest extent practicable and permitted by law, "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Executive Order 12898 charges each cabinet department to "make achieving environmental justice part of its mission," with the EPA responsible for implementation of Executive Order 12898. The Council of Environmental Quality (CEQ) has oversight of the Federal government's compliance with Executive Order 12898 and NEPA.

3.13.2.1.2 State

Following the lead of Executive Order 12898, the State of California passed a series of environmental justice regulations in 2001. These laws define environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

3.13.2.2 Environmental Setting

3.13.2.2.1 Study Area

This section discusses the affected environment related to environmental justice in the study area. The study area is the city of West Sacramento, in Yolo County, and a small portion of east Solano County along the DWSC West Levee. Program effects occurring in Solano County would occur in a

rural area and would not have effects on a particular population; therefore, Solano County was not considered in this analysis. For comparison, the same demographic information presented for West Sacramento is also presented for Yolo County and the State of California.

3.13.2.2.2 Demographics

Local Setting

In 2000, Caucasians and Asians made up the largest two populations in the state, accounting for 59.5% and 10.9% of the population, respectively, while 16.8% of respondents claimed "other race." Those of Hispanic origin made up 32.4%, almost one-third of the State's population (U.S. Census Bureau 2008a).

The Federal government considers race and Hispanic origin to be two separate and distinct concepts. The Federal Office of Management and Budget's (OMB) standards for data on race generally reflect social definition recognized in this country, and do not conform to any biological, anthropological or genetic criteria. According to the revised OMB standards, race is considered a separate concept from Hispanic origin (ethnicity). For Census 2000, the questions on race and Hispanic origin were asked of every individual living in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race.

In 2000, Caucasians and Asians made up the largest two populations in Yolo County, accounting for 67.7and 9.9% respectively, while 13.8% of respondents claimed "other race." Those of Hispanic origin made up 25.9% of Yolo County (U.S. Census Bureau 2008b).

In 2000, Caucasians and Asians made up the largest two populations in the city of West Sacramento accounting for 65% and 7.2% of the population respectively, while 16% claimed "other race." Those of Hispanic origin made up 30% of the city (U.S. Census Bureau 2008c). Table 3.13-1 compares data regarding race in the study area in 2000 and 2005. Table 3.13-2 compares the household poverty status by city, county, and state.

Table 3.13-1. Race/Origin Characteristics by City/County/State, 2000 and 2005

	2000			2005/2006-2008		
	City of West Sacramento (percentage)	Yolo County (percentage)	State of California (percentage)	City of West Sacramento (percentage)	Yolo County (percentage)	State of California (percentage)
Race						
White	65.0	67.7	59.5	65.0	68.7	59.5
Black or African American	2.6	2	6.7	2.6	2.5	6.7
American Indian and Alaska Native	1.8	1.2	1.0	1.8	1.0	1.0
Asian	7.2	9.9	10.9	7.2	12.0	10.9
Native Hawaiian, other Pacific Islander	0.6	0.3	0.3	0.6	0.5	0.3
Some Other Race	16.0	13.8	16.8	16.0	11.3	16.8
Two or more races	6.9	5.2	4.7	6.9	4.2	4.7
Origin						
Hispanic	30.0	25.9	32.4	30.0	28.2	32.4

Source: U.S. Census Bureau 2008d, 2000, and 2006-2008 American Community Survey.

Table 3.13-2. Household Poverty Status by City/County/State, 2000

City	City of West Sacramento	Yolo County	State of California
Percent below poverty level	22.3	18.4	14.2
Source: U.S. Census Bureau 2008d; California Employment Development Department 2000.			

3.13.3 Environmental Consequences

This section describes the analysis of effects relating to environmental justice for the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.13.3.1 Assessment Methods

The following methodology is based on the EPA's Environmental Justice Guidance (U.S. Environmental Protection Agency 1998), which states that "Minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of analysis." As such, demographic data for the City of West Sacramento in the local setting and in Yolo County in the regional setting were compared to demographic data from the next highest unit of analysis, the State of California, to determine whether that specific area had a "meaningfully greater" percentage of minority or low-income population.

Demographic information was gathered for the city, county and state level. Proposed program environmental justice effects were analyzed by comparing census data from the local setting and regional setting with data for the State of California. Data were primarily collected from the U.S. Census Bureau 2000 Census and 2005 Census. The population data that are pertinent to the analysis of environmental justice include race, income, and age characteristics, and included:

- the percent of minority population (Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, some other race, and two or more races);
- the percent of persons of Hispanic origin;
- the percent of population below the poverty level; and
- the percent of population residing below the U.S. Census Bureau poverty threshold, defined as a single person with an income below $8,840, or a family of four with an income below $16,588.

3.13.3.2 Determination of Effects

Effects pertaining to environmental justice were considered significant if the program would result in a disproportionate effect on minority or low-income communities.

3.13.3.3 Effects and Mitigation Measures

3.13.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue. Without implementation of the program, there would be no potential displacement of homes or residences as a result of levee implementation.

Given levee conditions, under the No Action Alternative levee failure and subsequent flooding and inundation could temporarily or permanently displace residents over a wide area. Flood depth calculations prepared for the City of West Sacramento show that low-income and minority neighborhoods would not be disproportionately affected by flood inundation (PB 2007). Flooding could also result in temporary or long-term decreases in agricultural, industrial, and other economic enterprise in the city of West Sacramento that could result in a loss of jobs. However, this would likely affect populations of all income and ethnic classifications and would not result in a disproportionately high or significant effect on minority or low-income populations.

3.13.3.3.2 Flood and Recreation Program Alternatives

Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations

The proposed program would reduce the risk of flooding to existing residential, commercial, and industrial development in the WSAFCA service area. While there are low-income and minority populations present throughout the study area, the flood protection benefits of the program would reach all segments of the population in the city of West Sacramento.

In some cases, the implementation of levee alternatives (i.e., setback levees and adjacent levee raises) would extend the footprint of the levee landward, which may result in displacement of some residents. These types of treatments are proposed for the Sacramento River North and South Levees, Port North and Port South Levees, and the DWSC East Levee. These levee reaches encompass a large portion of the city of West Sacramento, contain a population of mixed demographics, and have residences that could be potentially affected by levee alternatives. Were displacement to occur, it would be directly adjacent to the levee and would result in the displacement of a few residences. No dividing of a community or disproportionate effect on low-income or minority communities would occur. In addition, levee treatments would be selected using criteria that consider the need to purchase real estate and land use compatibility, among others. Regardless of income and ethnic classifications, it is the program proponent's intention to avoid displacement of homes whenever possible and such treatments would be proposed only when it is absolutely necessary due to constraints such as engineering, construction, and the ability of the treatment to provide adequate flood protection for the entire population of the city. Furthermore, the program elements would not physically divide any city neighborhoods, and construction-related environmental effects (e.g. exposure to noise, dust, and traffic) would occur throughout the study area.

There is a known vagrant population that camps along the Sacramento River and DWSC East Levees within the city. The program could displace this population during construction activities. Recreational use of these areas as a result of the implementation of recreation program elements may deter camping activity. There is not enough data about this population to make conclusions

about the amount of people displaced. In addition, any loitering or camping along the river corridor is unlawful.

The program would not result in a significant disproportionate effect on minority or low-income populations.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect could occur in all nine program reaches.

Effect EJ-1 Finding	With Mitigation
Less than significant	N/A

Section 3.14
Visual Resources

3.14.1 Introduction

This section describes the regulatory and environmental setting for visual resources, effects on visual resources that would result from the program and mitigation measures that would reduce significant effects.

The key sources of data and information used in the preparation of this section are listed and briefly described below.

- *City of West Sacramento General Plan* (City of West Sacramento 2004)
- City of West Sacramento Municipal Code
- *Sacramento Riverfront Master Plan*, July 2003
- *Solano County General Plan*, December 2008
- Southport Design Guidelines, April, 1996, last amended November 2005
- *Southport Framework Plan*, May 1995, last amended 1998
- *Washington Specific Plan*, May 1996
- *West Sacramento Bicycle and Pedestrian Path Master Plan*, October 1991
- *West Sacramento Triangle Specific Plan*, Volume 1, June 1993
- *Yolo County General Plan*, July 1983, Open Space and Recreation Element last amended November 2002
- Zoning Regulations of the City of West Sacramento, March 2005

3.14.2 Affected Environment

3.14.2.1 Regulatory Setting

The proposed study area falls within the jurisdiction of the City of West Sacramento, Solano County, and Yolo County. Development in the city and counties is subject to the goals and policies of the *City of West Sacramento General Plan*, *Yolo County General Plan*, and specific area plans in the city, including visual resource and aesthetic policies, design guidelines, and ordinances such as tree preservation/removal ordinances.

3.14.2.1.1 Local

City of West Sacramento General Plan

The *City of West Sacramento General Plan* (City of West Sacramento 1990) identifies the following goals and policies for the implementation plan.

Urban Structure and Design

- **Goal B:** To enhance the relationship between the City and the Sacramento River.
  - **Policy B1:** The City shall seek to preserve the trees and other vegetation along the banks of the Sacramento River for their aesthetic qualities and environmental and ecological values.
  - **Policy B4:** The City shall promote the development of important visual and scenic areas along the riverfront, including around the barge canal, for public access, including water-related activities.
- **Goal D:** To maintain and enhance the quality of the City's landscape and streetscape.
  - **Policy D1:** The City shall endeavor to protect the tree canopy created by mature trees in existing developed areas and in newly developing areas.
  - **Policy D2:** The City shall require that all new development incorporate the planting of trees and other vegetation to extend the vegetation pattern of older adjacent neighborhoods into new development.

City of West Sacramento Tree Preservation Ordinance

The City of West Sacramento Tree Preservation Ordinance is found in Chapter 8 Health and Safety of the City's municipal code. The ordinance regulates the removal and preservation of heritage trees and landmark trees.

A heritage tree is any living tree with a trunk circumference of 75 inches or more or a native oak with a trunk circumference of 50 inches or more, both measured 4 feet 6 inches from ground level. The circumference of multi-trunk trees is based on the sum of the circumference of each trunk.

A landmark tree is any tree or stand of trees that is especially prominent, stately, or that is of historic significance as designated by the city council.

It is unlawful to perform any of the following acts affecting a landmark or heritage tree without a tree permit issued by the tree administrator:

- move, remove, cut down, poison, set fire to or permit fire to burn close to, or perform or fail to perform any act that results in the unnatural death or destruction of a landmark or heritage tree;
- perform any activity that will interfere with or retard the natural growth of any landmark or heritage tree;
- perform any work or permit any work to be performed within the dripline area of a landmark or heritage tree that would endanger the tree;
- trim or prune any branch of a landmark or heritage tree that is 5 inches in diameter or greater;

- change the appropriate amount of irrigation or drainage water provided to any landmark, heritage, or street tree;
- trench, grade, pave, or otherwise damage or disturb any exposed roots within 1 foot outside the dripline area of any landmark, heritage, or street tree;
- park or operate any motor vehicle within 1 foot outside the dripline area of any landmark, heritage, or street tree;
- place or store any equipment or construction materials within 1 foot outside the dripline area of any landmark, heritage, or street tree;
- place, apply, or attach any signs, ropes, cables, or any other items to any landmark, heritage, or street tree;
- cut or trim any branch of any landmark, heritage, or street tree that is 5 inches in diameter or greater; or
- place or allow to flow any oil, fuel, concrete mix, or other deleterious substance into or over areas within 1 foot outside the drip area of any landmark, heritage, or street tree.

A tree permit requires the applicant to replace the tree with a living tree(s) on the property or within the city in a location approved by the tree administrator. The replacement tree(s) must be replaced if it dies any time with 3 years of the initial planting. Replacement is not required for trees posing a risk or hosting a parasitic plant.

Replacement trees are required at the ratio of 1-inch diameter of replacement plant for every 1-inch diameter of tree removed. Replacement trees may be a combination of 15-gallon-size trees, which are the equivalent of a 1-inch-diameter tree, or 24-inch box trees, which are the equivalent of a 3-inch-diameter tree.

If trees cannot be replaced on site, the applicant must pay an in-lieu fee, which will be used to purchase and plant trees elsewhere in the city of West Sacramento.

City of West Sacramento Zoning Ordinances

The following zoning ordinances are citywide design standards that would apply to the proposed program. The ordinances listed below have been identified for their direct relation to program aesthetics; however, other portions of these ordinances indirectly relate to aesthetics, as they are drivers of design, and it is recommended that these ordinances be referred to in their entirety for details.

Title 17.31 Fences, Walls and Hedges

17.31.010 Maximum Heights

17.31.011 Three Foot Limit

No fencing, walls, structures or hedges over 3 feet in height (except in the R-1-A and R-2 zone) shall be allowed in the following areas:

A. In Residential zones in front setbacks;

B. In Residential zones in street side setbacks within forty-five (45) feet of a street corner;

C. In any zone within ten (10) feet of any street property line or within five feet of the sidewalk where separated sidewalks exist.

D. In any zone within a triangle formed by measuring thirty (30) feet from any street corner down the lot lines and connecting across the property;

E. In Residential zones within a triangle formed by measuring fifteen (15) feet from the rear street side corner of a corner lot down the lot lines and connecting across the property.

17.31.012 Four Foot Limit

In the R-1-A and R-2 north of the Deep Water Ship Channel, zone the maximum height allowed in A., B., and C., above shall be four (4) feet for fences which are at least 95% open to views through the fence.

17.31.013 Seven Foot Limit

No fence or wall over seven (7) feet in height shall be allowed within any setback area in a residential zone.

17.31.020 Required Screening

A. A solid hedge, vine-covered chain-link fence or masonry wall of a minimum of six (6) feet in height shall be provided around the perimeter of all exterior storage or work areas and loading areas (see Landscape Development Guidelines). Display areas for the sale or rental of heavy equipment or commercial vehicles are exempt from the screening requirement.

B. A masonry or concrete wall of a minimum of five (5) feet in height shall be provided around outdoor refuse collection areas (see Section 17.35 and Landscape Development Guidelines).

C. Solid fences or sound walls shall be provided between land uses as required by the Landscape Development Guidelines, The Screen Canopy.

Title 17.32.000 Performance Standards

17.32.010 Purpose and Intent: It is the purpose and intent of these standards to prevent any use which may create dangerous, injurious, noxious or otherwise objectionable conditions.

17.32.020 Applicability: These Performance Standards shall apply to all uses and properties in the City as of the date of adoption of this Ordinance, including existing uses. The Planning Commission may approve extensions for compliance for existing uses with a contract and schedule for full compliance. The maximum time limit of an extension shall be five years and shall be based on the degree of expenditure needed to achieve full compliance compared to the total value of the improvements related to the use and the degree of hazard or impact to the adjoining properties and the community from the existing non-compliance with the Standards.

17.32.030 Standards

N. Lighting: Utilize the Illuminating Engineers Society of North America (IESNA) standards when reviewing exterior lighting for commercial and industrial zones of the City.

Title 17.33.000 Signs

17.33.010 Purpose and Intent: The purpose of this chapter is to create a comprehensive and balanced system of signs which will allow adequate business identification and communication with a quality appearance. Signs authorized under this chapter should:

A. Encourage a desirable urban character consistent with the General Plan;

B. Preserve and improve the appearance of the city as a place to live, work and visit;

C. Eliminate confusing, distracting, or dangerous sign displays which interfere with vehicular traffic;

D. Promote commerce;

E. Provide for fair and equal treatment of sign users;

F. Promote ease of sign ordinance administration; and

G. Provide for eventual elimination of pre-existing, non-conforming signs on a fair and equitable basis.

Sacramento Riverfront Master Plan

The SRMP is a collaborative planning document developed by the Cities of Sacramento and West Sacramento along with Yolo and Sacramento Counties, and used to guide riverfront development along the Sacramento River. The SRMP places emphasis on improved public open space along the riverfront and enhancement and preservation of riverine, riparian, and upland forest environments to provide a richer experience for the user (Wallace Roberts and Todd 2003).

Solano County General Plan

The *Solano County General Plan* (Solano County 2008) identifies the following goals and policies for the implementation plan.

Resources

Goal RS.G-4: Preserve, conserve, and enhance valuable open space lands that provide wildlife habitat; conserve natural and visual resources; convey cultural identity; and improve public safety.

Biological Resources

Policy RS.P-6: Protect oak woodlands and heritage trees and encourage the planting of native tree species in new developments and along road rights-of-way.

Sacramento–San Joaquin Delta Policies

Policy RS.P-21: Preserve and protect the natural resources of the Delta including soils and riparian habitat. Lands managed primarily for wildlife habitat should be managed to provide inter-related habitats.

Scenic Resources

Policy RS.P-35: Protect the unique scenic features of Solano County, particularly hills, ridgelines, wetlands, and water bodies.

Southport Implementation Plan

The Southport Implementation Plan is a component of the overall *Southport Framework Plan* that provides an overview of the approval process, development and infrastructure phasing, natural resource issues, and affordable housing requirements. Directly related to aesthetics and the character of Southport, the implementation plan outlines habitat conservation measures to protect sensitive resources such as riparian woodland along the Sacramento River, retains agriculture areas with buffer zones, and complies with the City's tree preservation ordinance by protecting native trees (City of West Sacramento 1995).

West Sacramento Bicycle and Pedestrian Path Master Plan

The *West Sacramento Bicycle and Pedestrian Path Master Plan* (Callander Associates 1991) identifies the following objectives and policies.

Objective 4—Acquisition, Implementation and Maintenance: Provide detailed planning and implementation of the path system as directed by the Department of Public Works and Department of Parks and Community Services.

Policy 4.5: Preserve natural vegetation, wherever possible, and provide low maintenance, drought-tolerant planting along paths as needed for climate amelioration, buffering and aesthetic enhancement.

Policy 4.6: Acknowledge visibility requirements of users in design of planting and preservation of natural vegetation.

West Sacramento Triangle Specific Plan

The *West Sacramento Triangle Specific Plan* (Zimmer Gunsul Frasca 1993) is a comprehensive planning document used to guide development within the "Triangle" area of West Sacramento. The Triangle is bounded by SR 275, Business 80, and the Sacramento River and includes a small parcel south of Business 80. The Triangle is subdivided into five neighborhoods: the Waterfront, the Core, the Park Blocks, the Parkway Edge, and the RGA Edge. Each planning area has guidelines for preserving key views (e.g., views to the Sacramento River and Tower Bridge). The study area is located within the Waterfront planning area, and the *Triangle Specific Plan* identifies the following policies and guidelines for the Waterfront.

Guideline—Required View Corridors: Views to the east from River Road may not be blocked for more than 220 feet measured parallel to the waterfront. Eastward extensions of east-west street right of ways are to be maintained as view corridors.

Guideline—Park Blocks View Corridor Easement: Provide and maintain a 50 foot wide open space easement on axis with the Parks Blocks between River Road and the Sacramento River. The purpose of this easement is to provide pedestrian access to the river bank and views of the Tower Bridge from the Park Blocks.

Guideline—Riverfront Parks: Provide views to the Sacramento River and the Downtown Sacramento skyline from the Promenade. The use of lower growing plant material and high canopy upper story trees will create an inviting and diverse visual experience.

Guideline—Respect views to waterfront: Establish landscape view corridors to provide physical access to the waterfront and Sacramento River. Design and orient landscape areas to maximize views and access towards the river.

Yolo County General Plan

The *Yolo County General Plan* (Yolo County 1983) identifies the following goals, objectives and policies for the implementation plan.

Scenic Highways Policies

Policy SH-5: Protection. Yolo County shall regulate and guide land uses, recreation, circulation, conservation, and open spaces and shall require retention or conservation of natural features and vegetation along both State and locally designated scenic highways.

Policy SH-6: River Roads. Yolo County shall consider designating "river roads" as designated scenic highways.

Policy SH-7: Natural Vegetation and Landscaping. Yolo County shall require retention, of existing trees and vegetation and natural landforms, and shall require landscaping to enhance scenic qualities and/or screen unsightly views, and shall implement regulations to prohibit removal of trees along public rights-of-way without consideration of their scenic or historic value, and shall implement tree conservation or enhancement in new development, with emphasis on oak preservation.

Recreation Policies

Policy REC-1: Recreation Basic. Yolo County acquires, maintains and provides a variety of park, open and natural areas for recreational and leisure pursuits at the regional, community and neighborhood level through means of California statute, established land use controls, regulations, real property transfer, and the advice, guidance and cooperation of other jurisdictions and through coordination with other elements of this general plan, as amended. It shall be the basic recreation policy of the County to: Protect and preserve as many of the County's recreational and scenic resources as possible.

Yolo County Open Space and Recreation Element

The Yolo County Open Space and Recreation Element (Yolo County 2002) of the general plan identifies the following goals, objectives, and policies for the implementation plan.

Goal OG-7: Preserve aesthetic resources and values.

Objective OO-8: Protection of identified areas of unique historical or cultural value within the county and preservation of those sites for educational, scientific and aesthetic purposes.

Objective OO-9: Identification and preservation of scenic corridors and viewsheds.

Policy OP-7: Development shall be directed away from naturally occurring riparian areas and wetlands.

Yolo County Oak Woodland Conservation and Enhancement Plan

Many residents and visitors enjoy the oak woodlands in Yolo County for their scenic beauty while recreating and driving through the county. The *Yolo County Oak Woodland Conservation and Enhancement Plan* promotes voluntary efforts to conserve and enhance the county's oak woodlands, which provide significant aesthetic, ecological, and economic benefits (Yolo County 2007).

3.14.2.2 Environmental Setting

This section discusses the existing conditions related to visual resources in the study area. The methods used to evaluate visual resources and viewer groups in general are described, and the visual resources in the region and study area are characterized.

3.14.2.2.1 Study Area

For the purposes of this program document, the study area consists of the program footprint plus an approximately 500-foot-wide landside buffer. The study area occurs along the following levee reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC West, DWSC East, Yolo Bypass, and Sacramento Bypass Levee reaches.

Representative photographs of the study area were taken on November 29, 2007 and February 5, 2009, to document key views and typical conditions. The photograph locations are shown on Figure 3.14-1, and the photographs are contained in Figure 3.14-2a–i.

3.14.2.2.2 Concepts and Terminology

Identifying a study area's visual resources and conditions involves three steps:

- Objective identification of the visual features (visual resources) of the landscape.
- Assessment of the character and quality of those resources relative to overall regional visual character.
- Determination of the importance to people, or *sensitivity*, of views of visual resources in the landscape.

Because evaluating visual effects is inherently subjective, Federal and professional standards of visual assessment methodology have been used to determine potential effects on aesthetic values of the study area (see Environmental Consequences below). The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area (Federal Highway Administration 1988). Scenic quality can best be described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area (U.S. Bureau of Land Management 1980). Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, number of views seen, distance of the viewers, and viewing duration. Viewer sensitivity relates to the extent of the public's concern for a particular viewshed. These terms and criteria are described in detail below.

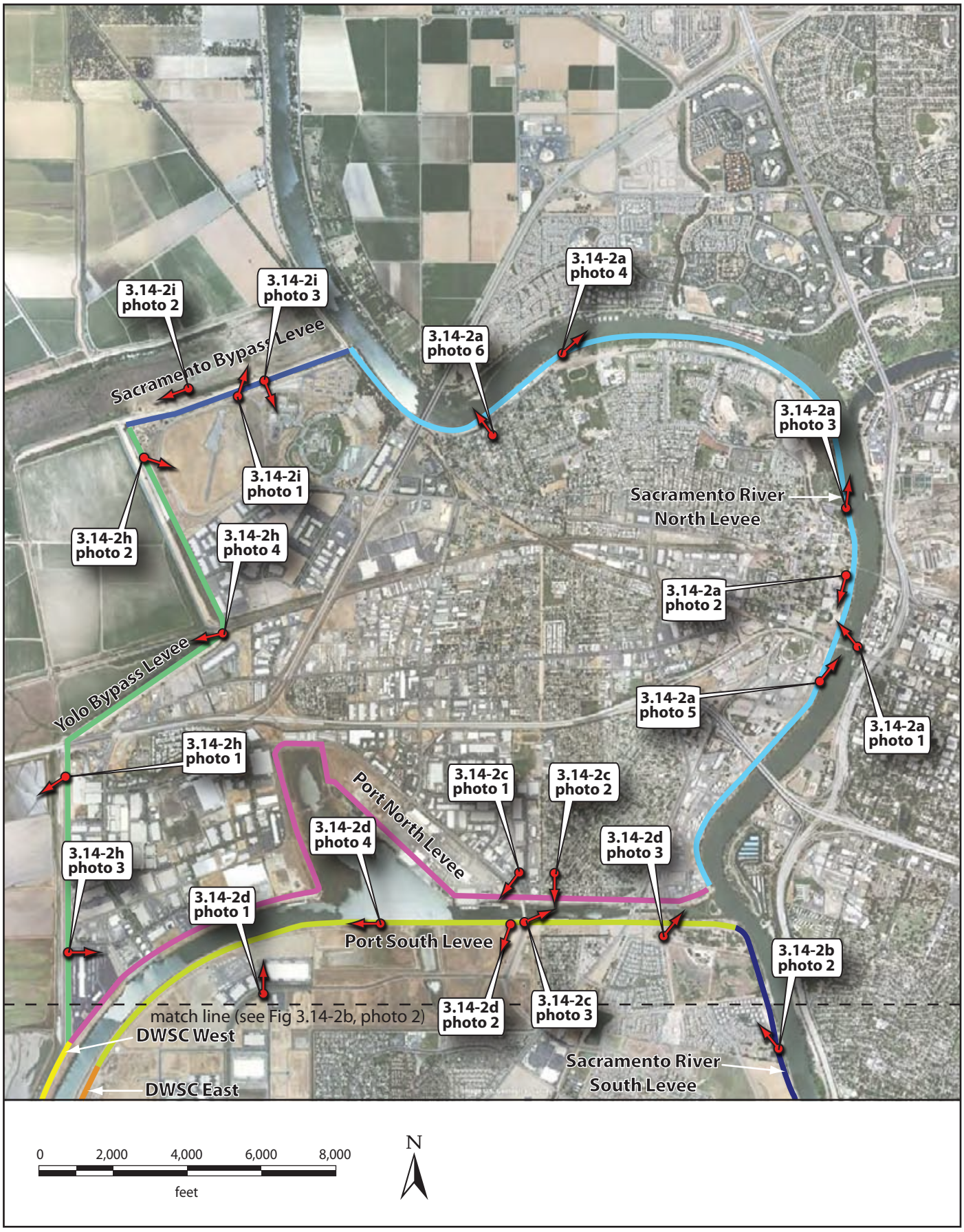
Visual Character

Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Urban features include those associated with landscape settlements and development, including roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features (USDA Forest Service 1974; Federal Highway Administration 1988). The appearance of the landscape is described in terms of the dominance of each of these components.

Visual Quality

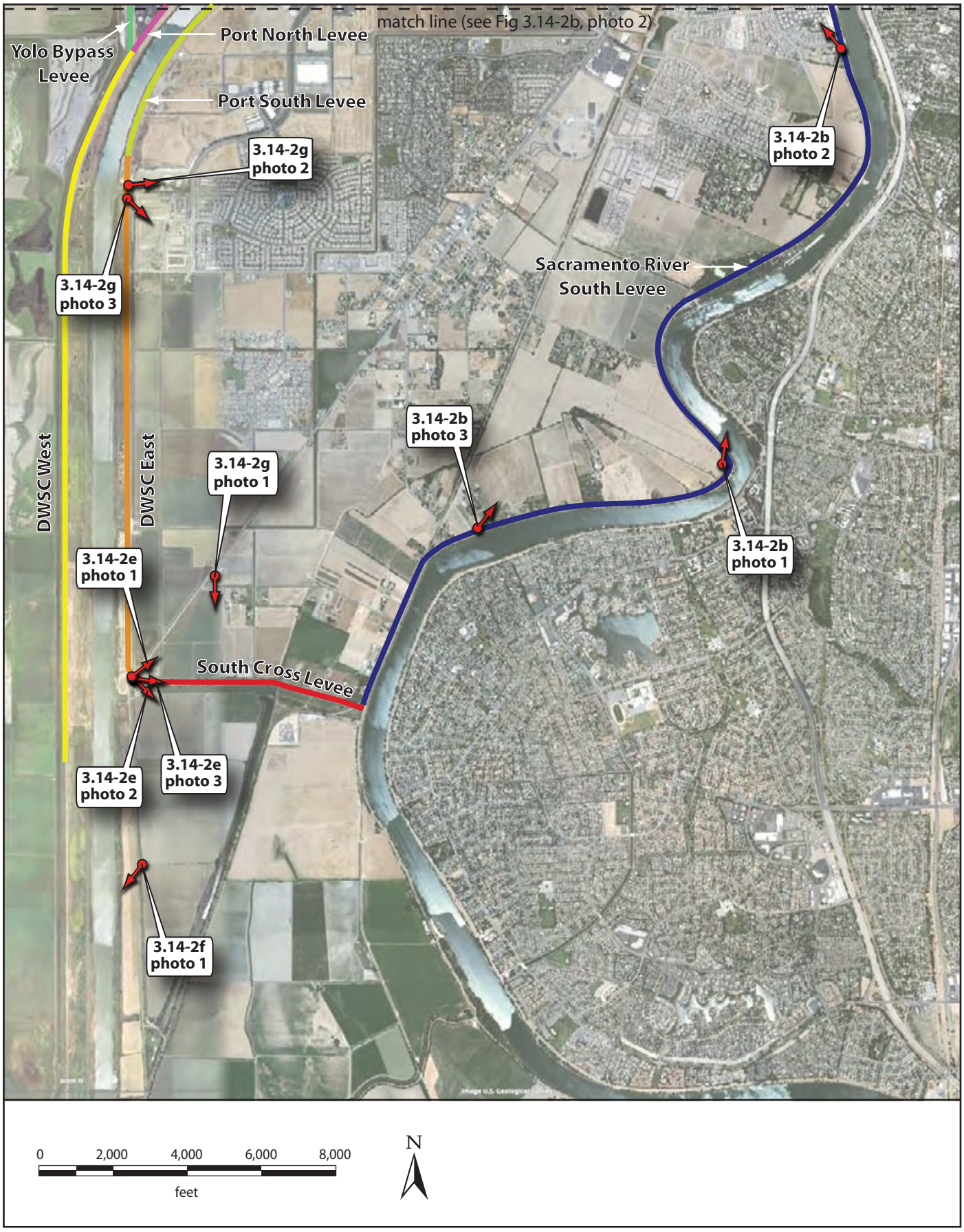
Visual quality is evaluated using the well-established approach to visual analysis adopted by Federal Highway Administration, employing the concepts of vividness, intactness, and unity (Federal Highway Administration 1988; Jones et al. 1975), which are described below.

- *Vividness* is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- *Intactness* is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, and in natural settings.



00875.07 EIS\EIR (8-09)

Figure 3.14-1
Key Viewpoints



00875.07 EIS\EIR (8-09)

Figure 3.14-1
Key Viewpoints

- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by the visual sensitivity of the viewers. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Viewer Exposure and Sensitivity

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. Viewer sensitivity or concern is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer relative to the resource; therefore, visibility and visual dominance of landscape elements depend on their placement within the viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (Federal Highway Administration 1983). To identify the importance of views of a resource, a viewshed must be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in a viewshed may vary between different geographic regions or types of terrain, the standard foreground zone is 0.25 to 0.5 mile from the viewer, the middleground zone is from the foreground zone to 3 to 5 miles from the viewer, and the background zone is from the middleground to infinity (USDA Forest Service 1974).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration. For example, visual sensitivity is generally higher for views seen by people who are driving for pleasure, people engaging in recreational activities such as hiking, biking or camping, and homeowners. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work (USDA Forest Service 1974; Federal Highway Administration 1983; U.S. Soil Conservation Service 1978). Commuters and non-recreational travelers typically have fleeting views and tend to focus on commute traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Judgments of visual quality and viewer response must be made based in a regional frame of reference (U.S. Soil Conservation Service 1978). The same landform or visual resource appearing in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape but have very little significance in mountainous terrain.

3.14.2.2.3 Viewer Groups and Viewer Responses

The primary viewer groups in the study area are persons living or conducting business near levees; travelers using the interstates, highways, and smaller local roads (including those on levee crowns); and recreationists (boaters, beachgoers, and anglers using canals, creeks, and rivers; trail users; equestrians; bicyclists; joggers; etc.). All viewer groups have direct views of the study areas described above.

Residents

Suburban and rural residents are located directly adjacent to levees or are separated from them by local streets or a similar corridor. Suburban residences mostly are oriented inward toward the developments, and only residences on the outer edge of the developments have middleground and background views of levees. The separation and orientation of rural residences allow inhabitants to have direct views over agricultural fields toward levees. Both suburban and rural residents are likely to have a high sense of ownership over their adjacent waterways, the open space that surrounds them, the recreational opportunities they provide, and their inherent scenic quality. Because of their potential exposure to such views, short distance from the study areas, and sense of ownership, these residents are considered to have high sensitivity to changes in the viewshed.

Businesses

Viewers from industrial, commercial, government, and educational facilities have semi-permanent views from their respective facilities. Situated in different locations throughout the study areas, these facilities' views range from views limited by the levees to sweeping views that extend out to the background. Employees and users of these facilities are likely to be occupied with their work activities and tasks at hand. However, some of these facilities depend on the waterways in the study area as a destination spot and source of income (e.g., Port of West Sacramento).

People using these facilities often travel to and from work and spend leisure time on the waterways and levees. For these reasons, their limited viewing times, their focus on tasks at hand, and the current use of the levees, this viewer group is considered to have moderate sensitivity to changes in views.

Roadway Users

Roadway users' vantages differ based on the roadway they are traveling and elevation of that roadway. The majority of views are mostly limited to the foreground by suburban, commercial, and industrial development; vegetation; and the levees themselves. Views to the middleground and background are present but are limited to areas where structures that otherwise would conceal background views from the roadway are set back. However, if the vantage is elevated, as on portions of Capital City Freeway, bridges crossing over the Sacramento River, levee roads (e.g., South River Road), and other local roadways, most views of the surrounding mountain ranges (Vaca Mountains, Coast Range, and Sierra Nevada), waterways (American and Sacramento Rivers, DWSC, Yolo Bypass when flooded) and open space areas (agriculture, parkways) are only partially obstructed by the rooflines and mature vegetation in the area.

Travelers use roadways at varying speeds; normal highway and roadway speeds differ based on the traveler's familiarity with the route and roadway conditions (e.g., presence/absence of rain). Single views typically are of short duration, except on straighter stretches where views last slightly longer.

Viewers who frequently travel these routes generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with a high regard and as a holistic visual experience. Furthermore, there are scenic stretches of roadway passing through the study areas that offer sweeping views of the surrounding area that are of interest to motorists, especially when traveling on the bridges or levee tops. For these reasons, viewer sensitivity is moderate among most roadway travelers.

Recreationists

Recreational users view the study areas from parks, waterways, roadways, trails, and from the levees themselves. Recreational uses consist of boating and fishing, hunting in the bypasses, birding, walking, running, jogging, and bicycling along trails, levee crowns, and local roads. Users of the waterways are likely to seek out natural areas within the corridor, such as sand and gravel bars and beaches, in addition to using the waterways as a resource. Waterway users have differing views based on their location in the landscape and are accustomed to variations in the level of industrial, commercial, suburban, and recreational activities occurring within the study area. The amount of vegetation present along the levees creates a softened, natural edge that is enjoyed by all recreationists. Local recreationists also have a high sense of ownership over the waterways and corridors they use for recreation, and these areas are highly valued throughout the greater Sacramento area.

Viewer sensitivity is high among recreationists using the study areas because they are more likely to value the natural environment highly, appreciate the visual experience, have a high sense of ownership, and be more sensitive to changes in views.

3.14.2.2.4 Visual Character of Region

The study area is located in the city of West Sacramento, in the southern portion of the Sacramento Valley, directly west of the city of Sacramento. The region, as discussed in this section, is considered the area within 30 miles of the study area. The region consists primarily of agricultural and suburban land uses, with the urban core of Sacramento anchoring the northeastern boundary. Although many of the western portions of the region are still in agricultural production, there has been and continues to be an increasing conversion of agricultural land to urban and suburban land uses. This trend is evident around the outskirts of Sacramento. Many of the small, agrarian communities in this region, such as Rio Linda, Dixon, and Woodland, are experiencing similar growth and land use conversions.

Agricultural land, planted predominantly with row crops, stretches for miles in the region. A patchwork of fields separates the urban center of Sacramento, and its suburban outskirts, from smaller, outlying cities. These fields offer expansive views that, when haze is at a minimum, extend over agricultural fields and recent development in the foreground to the middleground and background. The high-rise buildings of downtown Sacramento can be seen in the middleground, rising up above the eastern tree line. Background views to the Sierra Nevada foothills are more rarely seen to the east while views of Mount Vaca and the Sutter Buttes are more commonly seen to the west and north. These types of landscape views are strongly characteristic of the Sacramento Valley and have contributed to the region's identity.

Growth radiating out from city and town cores is reducing the amount of agricultural land in the region and closing the gap between the Sacramento metropolitan region and smaller, outlying cities. This growth is changing the visual character from rural to suburban. Development of the smaller cities in the region, including West Sacramento, is typified by a growing core of residential, commercial, and some industrial land uses with agricultural fields surrounding the city outskirts. Residential and commercial development in the region tends to be homogenous in nature, having similar architectural styles, building materials, plan layouts, and commercial entities; and development often lacks a distinctive character from one city to the next.

West Sacramento is bounded by the Sacramento River Bypass to the north, Sacramento River to the north and east, and the DWSC and Yolo Bypass to the west. It is developing in a pattern similar to other cities except the northern portions are already developed, and the natural and human-made waterways and bypasses prevent further development to the north, east, and west. Therefore, most major development is spreading southward where vast acreage of agricultural land remains. Development in the northern, eastern, and western portions of West Sacramento is occurring on disjunct parcels of agricultural land or redevelopment and infilling of vacant parcels in older portions of the city.

Overall, a mix of developed and natural landscapes characterizes the region. The landscape pattern is influenced by development sprawling from existing city cores and the major roadways in the region. Water features in the region include the Sacramento and American Rivers and their tributaries, the DWSC, Yolo Bypass (when flooded), numerous north Delta sloughs, and smaller local irrigation ditches.

3.14.2.2.5 Visual Character of Study Area

The visual character of each of the nine reaches in the study area is described below.

Sacramento River North Levee

The Sacramento River North Levee generally runs north-south between the Sacramento Bypass to the north and the Port North Levee to the south and serves as the eastern boundary to the city. The area includes the urban core of the city, commercial and industrial developments, residential communities, open space, developed riverfront parkways, and riparian corridors.

Commercial developments are located adjacent to the Sacramento River between the I Street and West Capitol bridges. Manicured landscapes and mature trees surround the commercial buildings. A developed riverfront parkway is also situated in this reach of levee. The commercial developments and riverfront parkway are also visible to recreationists on the river (Figure 3.14-2a, Photo 1). Industrial developments are located south of West Capitol Avenue and continue to the Port North Levee. The industrial facilities block the views to the east of the Sacramento River, downtown, and beyond from travelers on Jefferson Boulevard and residences west of Jefferson Boulevard.

Residences with primary views of the study area are located on the northern portion of this levee reach and tend to be older suburbs. In some cases residences directly abut or are separated from levees only by local roadways (Figure 3.14-2a, Photo 2). These homes are commonly surrounded by fencing and mature landscaping, including tall native and non-native trees, even when located directly adjacent to a levee. Throughout this area, there are access locations where people can reach the river and use the levee crown for recreation. A new gated development was built within the last few years adjacent to the river with some homes constructed directly atop the levee. These homes



Photo 1. Looking northwest across the Sacramento River. This photo depicts the commercial development along the riverbank and riverfront park. Remnant riparian vegetation can be seen in the middleground.



Photo 2. Looking northeast along Riverbank Road. This photo depicts a local road separating the adjacent residences from the levee embankment.

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Figure 3.14-2a
Representative Photos of Program Area and Key Views



Photo 3. Looking north near the Broderick Boat Ramp. This photo depicts a section of levee containing open space, recreation facilities, and mature riparian trees. The Sacramento River is visible at center through the tree opening.

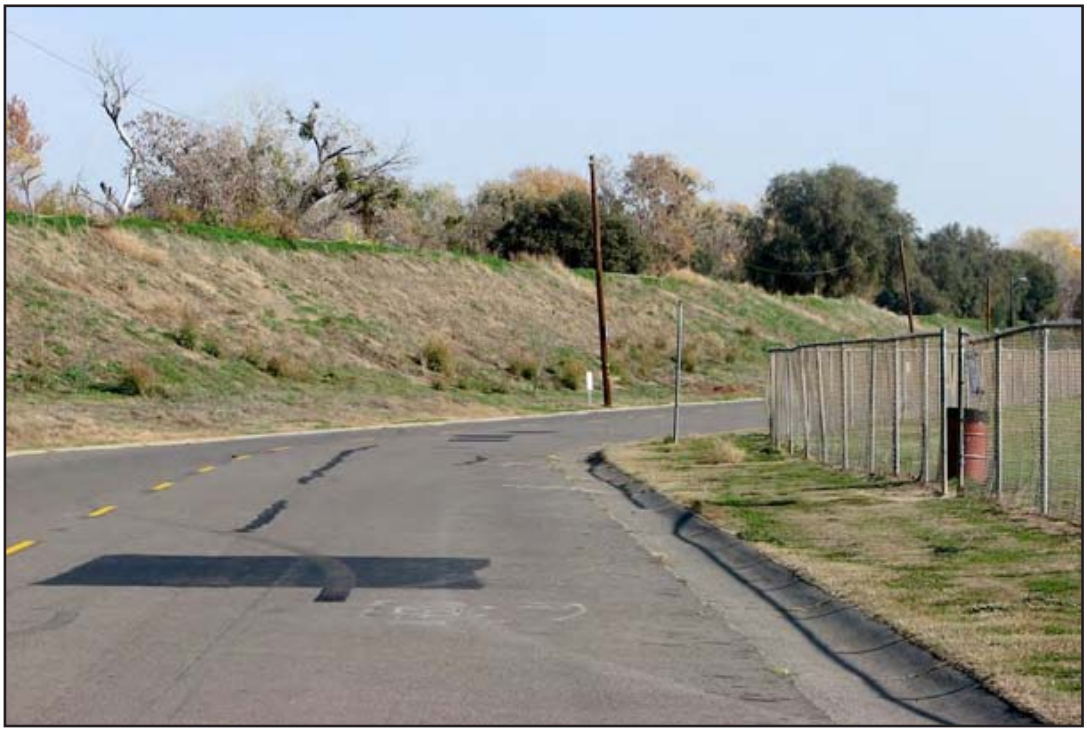


Photo 4. Looking east across Riverbank Road. Note the levee embankment across the middle of the photo with mature riparian tress visible on the waterside. This photo depicts a section of the levee with an open space element.

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Figure 3.14-2a
Representative Photos of Program Area and Key Views



Photo 5. Looking north across the Sacramento River toward the Tower Bridge and Old Sacramento. This photo depicts the mature riparian trees and associated vegetation that exists on the waterside levee slope and toe.



Photo 6. Looking north at the Sacramento River North Levee. This photo depicts the limited views from the residences along the majority of this levee reach. DWR's maintenance yard can be seen on top of the levee.

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Figure 3.14-2a
Representative Photos of Program Area and Key Views

are large two-story buildings with small lots and have not been designed to meld with the older communities (with respect to layout, architectural style, and streetscaping).

The Broderick Boat Ramp Park is situated north of the I Street Bridge and provides an open space area vegetated with mature riparian trees that can be viewed by adjacent roadway users and residents, as well as, recreationists on the river (Figure 3.14-2a, Photo 3). Farther north another open space area atop the levee is also vegetated with mature riparian trees and can be viewed from the adjacent residences and park users (Figure 3.14-2a, Photo 4). Mature riparian vegetation lines the river throughout this levee reach.

The Sacramento River corridor creates a noticeable contrast to the surrounding, predominantly developed area. This portion of the river is highly utilized and enjoyed for its vegetation and wildlife, recreational opportunities, and high scenic quality. Most views from the river and shore are limited to the foreground by bends in the river, vegetation, and development. Large remnant patches of riparian vegetation line this stretch of river, enhancing the levee views of recreationists on the river (Figure 3.14-2a, Photo 5). The visual quality of the area is moderately unified because the landscape is fairly congruent and harmonious in terms of scale, color, and form. Development and other infrastructure preclude a highly unified visual landscape; they have affected the intactness and unity of the viewshed by encroaching on the river's floodplain and agricultural areas. The inherent scenic qualities presented by a naturalized, accessible river corridor in a highly developed area result in a vividness that is moderately high. The presence of development and infrastructure surrounding this corridor results in a study area that is moderate in intactness and unity.

Within this levee reach, expansive middleground and background views can be viewed only from atop the levee or from the upper floors of multi-story buildings in the commercial and industrial developments. Residences in this levee reach have foreground views of the levee and mature riparian trees, with very limited or no middleground and background views (Figure 3.14-2a, Photo 6). From atop the levee, foreground views to the east extend over the Sacramento River and riparian vegetation toward middleground views of the high-rise building of downtown Sacramento. Background views to the Sierra Nevada foothills to the east are rarer; views of the Vaca Mountains and the Coast Range are seen to the west more commonly, air quality permitting.

Sacramento River South Levee

The Sacramento River South Levee is located between the DWSC East Levee to the south and the Port South Levee to the north. Rural residences with large parcels of land typify this levee reach. The residences are commonly older, small, one-story residences and newer, larger, two-story residences that are scattered off South River Road and small, one-lane, rural roadways such as Davis Road and Linden Road. These homes often are far apart and are at a lower density than newer developments even where they are closer together (Figure 3.14-2b, Photo 1). These residences typically are surrounded by fencing and mature landscaping, including tall native and non-native trees. This landscaping distinguishes them from the surrounding open space agricultural fields and livestock grazing lands. Barns and corrals are commonly seen structures on rural residential land where owners keep horses and livestock. Additionally, pockets of shrubs, trees, and riparian vegetation located in swales and drainages create a noticeable contrast to the surrounding, predominantly low-lying grassland and agricultural vegetation. Riparian vegetation along the Sacramento River also can be viewed.

Newer suburban residences have been and are being built in areas directly adjacent to this levee reach in the northern portion and in other portions of West Sacramento at a much higher density

than in the past. These are one- and two-story homes with very little space between units. Because these areas are fairly new, they lack mature vegetation (Figure 3.14-2b, Photo 2). These developments alter the agrarian visual character of the study area to one visually analogous to newly developed areas elsewhere in the Sacramento metropolitan region.

The river corridor along this levee reach is also highly utilized and enjoyed for vegetation and wildlife, recreational opportunities, and high scenic quality. Most views from the river and shore are limited to the foreground by bends in the river, vegetation, and development. Large remnant patches of riparian vegetation line this stretch of river, enhancing the levee views of recreationists on the river. However, this reach also contains long stretches of levee denude of vegetation and lined with riprap, detracting from the scenic quality.

Within the study area, foreground views extend over agricultural fields and recent development toward background views of the Sierra Nevada foothills and Vaca Mountains. Downtown Sacramento can be seen in the middleground, distinguished by buildings rising above the tree line (Figure 3.14-2b, Photo 3). This contrast is particularly vivid seasonally, when autumn foliage contrasts with the plowed fields or when trees have gone dormant and shed their leaves, exposing more of the downtown Sacramento skyline.

Overall, the visual quality of the Sacramento River South Levee is moderately unified because the existing landscape is fairly congruent and harmonious in terms of scale, color, and form. The intrusions associated with newer residential development and other infrastructure preclude a highly unified visual landscape. These intrusions have affected the intactness and unity of the viewshed and have altered the pastoral character to one that is suburban. The presence of existing development and utility infrastructure results in a study area with moderate vividness, intactness, and unity.

Port North Levee

The Port North Levee is located between the DWSC West Levee to the west and the Sacramento River North Levee to the east and borders the Port of West Sacramento Turning Basin and ship lock. The Turning Basin divides the city into two distinct regions. The urban city core and industrial zone are located north of the Port North Levee, and the majority of the residential suburban development and all agricultural lands in the city are south of the Turning Basin. Large industrial and commercial developments are typical of this levee reach, with some residential development on the far eastern portion of this reach.

Industrial developments directly adjacent to the study area typically consist of large expanses of pavement or gravel, large warehouse-type buildings that are industrial looking and lack distinctive architectural style, and little to no vegetation (Figure 3.14-2c, Photo 1). These developments obstruct the middleground and background views from adjacent roadway travelers and residences.

Pockets of open space bordering the Turning Basin have mature native and non-native trees and are enjoyed for their scenic quality. The Turning Basin is highly utilized and enjoyed for its recreational opportunities and wildlife. Most views from the water and shore are limited to the foreground because they are obstructed by the levees, vegetation, and large industrial buildings.

Residences with views of the study area are located in the eastern portion of this levee reach and are older suburban developments. In some cases residences directly abut the levee (Figure 3.14-2c, Photo 2). These homes are commonly surrounded by fencing and mature landscaping, including tall



Photo 1. Looking north along South River Road. This photo depicts the southern portion of this levee reach and the lower density development typical of this area. Note the mature vegetation along the waterside and landside of this levee.



Photo 2. Looking northwest from South River Road. This photo depicts the high density residential development that is being built along the northern portion of this levee reach.

Figure 3.14-2b
Representative Photos of Program Area and Key Views



Photo 3. Looking northwest from South River Road. This photo depicts the typical rural character of the southern portion of this levee reach. Downtown Sacramento can be seen along the horizon line, distinguished by buildings rising above the tree line.

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Figure 3.14-2b
Representative Photos of Program Area and Key Views



Photo 1. Looking west at the Port of West Sacramento. This photo depicts the industrial character of the port and the limited middleground and background views roadway travelers have.



Photo 2. Looking south at the residences abutting the eastern portion of this levee reach. Note the train cars and tracks separating the residences from accessing the water and the mature riparian vegetation beyond the tracks.

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Figure 3.14-2c
Representative Photos of Program Area and Key Views



Photo 3. Looking east across the DWSC from the Port South Levee. This photo depicts the mature riparian vegetation that lines eastern portion of the Port North Levee.

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Figure 3.14-2c
Representative Photos of Program Area and Key Views

native and non-native trees, even when located directly adjacent to a levee. Throughout this area, there are access locations where people can reach the river and use the levee crown for recreation. Residences in this levee reach have foreground views of the levee and mature riparian trees, with little to no middleground and background views (Figure 3.14-2c, Photo 3).

Within this levee reach, expansive middleground and background views can be viewed only from atop the levee or from within the commercial and industrial developments bordering the Turning Basin. Background views to the Sierra Nevada foothills to the east are rarer; views of the Vaca Mountains and the Coast Range to the west are more common, air quality permitting.

The visual quality of the Turning Basin itself and the views offered from it are moderate. Appealing views of the Yolo Bypass, surrounding open space, and West Sacramento and Sacramento cityscapes are limited by surrounding development and infrastructure, but present both rural and urban scenes that are attractive. Views from the Port North Levee are low to moderate in vividness. The artificial intrusions associated with the surrounding development and infrastructure are moderate to high, resulting in low to moderate intactness. The visual quality of the area is low in unification because the landscape is disjunctive in its abrupt changes in land use.

Port South Levee

The Port South Levee is located between the DWSC East Levee to the west and the Sacramento River South Levee to the east and borders the Turning Basin and ship lock. The Turning Basin divides the city into two distinct regions. The urban city core and industrial zone are located north of the Port South Levee, and the majority of the residential, suburban development and all agricultural lands in the city are south of the Turning Basin. Expanses of open space and undeveloped lands, and commercial developments, are typical of this levee reach, with some residential development on the far eastern portion.

Commercial developments directly adjacent to the study area typically consist of large expanses of pavement, large warehouse type buildings that are industrial looking and lack distinctive architectural style, and little to no vegetation (Figure 3.14-2d, Photo 1). These developments obstruct the middleground and background views for adjacent roadway travelers. The area's infrastructure has already been completed (e.g. roadways, street lighting, etc.), but the majority of the parcels are still void of buildings.

Shoreline recreation occurs throughout this levee reach. A gravel road bordering the Turning Basin is accessible from Lake Washington Boulevard and Jefferson Boulevard. A parking facility and hand-carry boat launch is also accessible from Jefferson Boulevard at South River Road. Recreationists are the primary viewers of this levee reach. Mature native and non-native trees are located on the eastern end of this levee reach, with few large trees in the remaining reach. The Turning Basin is highly utilized and enjoyed for its recreational opportunities and wildlife. Most views from the water and shore are limited to the foreground because they are obstructed by the levees, vegetation, and large industrial buildings. Views from the levee and adjacent open space are expansive in all directions.

Residences with views of the study area are located in the eastern portion of this levee reach and are newer suburban developments. A large swath of open space and undeveloped land separates the residences from the levee and study area (Figure 3.14-2d, Photo 2). These homes are being built at a much higher density than in the past. Typically they are one and two-story homes with very little space between units. Because these areas are fairly new, they lack mature vegetation. These

developments alter the agrarian visual character of the southern city to one visually analogous to newly developed areas elsewhere in the Sacramento metropolitan region. Throughout this area, there are locations where people can access the river and use the levee crown for recreation.

Within this levee reach, expansive middleground and background views exist from the majority of the study area. From atop the levee, foreground views to the east extend over open space and undeveloped lands toward middleground views of the high-rise buildings of downtown Sacramento (Figure 3.14-2d, Photo 3). Background views to the Sierra Nevada foothills to the east are rarer; views of the Vaca Mountains and the Coast Range to the west are more common (Figure 3.14-2d, Photo 4), air quality permitting.

While the visual quality of the Turning Basin itself is moderate, the views offered from it are of moderately high quality. Appealing views of the Yolo Bypass, surrounding open space, and West Sacramento and Sacramento cityscapes present both rural and urban scenes that are attractive. Views from the Port South Levee are moderate in vividness. The artificial intrusions associated with the surrounding development and infrastructure are moderate, resulting in moderate intactness. The visual quality of the area is also moderate in unification because the landscape is disjunctive in its abrupt changes in land use.

South Cross Levee

The South Cross Levee is located between the DWSC East Levee to the west and the Sacramento River South Levee to the east. Rural residences with large parcels of land typify this levee reach. The residences are commonly older, small, one-story residences and newer, larger, two-story residences that are scattered off Jefferson Boulevard, South River Road, and small one-lane, rural roadways such as Burrows Avenue. These homes are often located far apart, and are at a lower density than newer developments even where they are closer together (Figure 3.14-2e, Photo 1). These residences typically are surrounded by fencing and mature landscaping, including tall native and non-native trees. This landscaping distinguishes them from the surrounding open space agricultural fields and livestock grazing lands. Barns and corrals are commonly seen structures on rural residential land where owners keep horses and livestock. Additionally, pockets of shrubs, trees, and riparian vegetation located in swales and drainages create a noticeable contrast to the surrounding predominantly low-lying grassland and agricultural vegetation.

In this levee reach, foreground views extend over agricultural fields and rural residences toward background views of the Sierra Nevada foothills and Vaca Mountains (Figure 3.14-2e, Photo 2). Downtown Sacramento can be seen in the middleground, northeast of the study area, distinguished by buildings rising above the tree line (Figure 3.14-2e, Photo3).

Overall, the visual quality of the South Cross Levee is moderately unified because the existing landscape is fairly congruent and harmonious in terms of scale, color, and form. The intrusions associated with residential development and other infrastructure preclude a highly unified visual landscape. These intrusions have affected the intactness and unity of the viewshed. The presence of existing development and utility infrastructure results in a study area with moderate vividness, intactness, and unity.

Deep Water Ship Channel West Levee

The DWSC West Levee is located between the Yolo Bypass Levee reach and convergence of the DWSC with the Sacramento River and serves as an eastern boundary to the Yolo Bypass. Land uses



Photo 1. Looking northeast at the commercial developments adjacent to this levee reach. Note the lack of mature vegetation and limited middleground and background views.



Photo 2. Looking southwest from the Port South Levee across the northern spur of Lake Washington. This photo depicts the open space and undeveloped land separating the project area and new suburban development to the south.

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Figure 3.14-2d
Representative Photos of Program Area and Key Views



Photo 3. Looking northeast from South River Road. This photo depicts views from atop the levee of Downtown Sacramento. Note the mature riparian vegetation in the middleground, present along the eastern portion of the Port South Levee.



Photo 4. Looking west along the Port South Levee. This photo depicts the overall character of this levee reach. Note the high recreation usage, primarily consisting of anglers, and the view of the coastal range (faintly visible at the horizon line).

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Figure 3.14-2d
Representative Photos of Program Area and Key Views



Photo 1. Looking west across the South Cross Levee. This photo depicts rural character and lower density development of this levee reach. Note the riparian vegetation along the waterside and landside of this levee.



Photo 2. Looking southwest across the south cross canaL. This photo depicts the agricultural fields back dropped by riparian vegetation along the Sacramento River that is characteristic of this levee reach.

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Figure 3.14-2e
Representative Photos of Program Area and Key Views



Photo 3. Looking northeast across the agriculture fields typical of southern West Sacramento. This photo depicts views from atop the levee of Downtown Sacramento. Jefferson Boulevard can be seen in the middle of the photo, dividing the agriculture fields.

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Figure 3.14-2e
Representative Photos of Program Area and Key Views

within the bypass are primarily agricultural or other open space uses that are compatible with flood control operations (Figure 3.14-2f, Photo 1). Agricultural production is limited to field and row crops. During periods of high flows in the Sacramento River, the bypass may be filled with water. Views from the bypass are expansive when haze is at a minimum. For the northernmost 0.5 mile of levee reach, views from the levee to the east extend over open space and new residential developments in the foreground and middleground, while typical views from the levee to the west, north, and south in this levee reach extend over agricultural fields and open space in the foreground to the middleground and background. The remainder of this levee reach, south of the more developed city, contains sweeping views from atop the levee in all directions over agricultural fields, rural residences, and open space in the foreground to the middleground and background. Views from the water and shore are limited by the levees. Only scattered trees exist through the majority of this levee reach, with the exception of the southernmost 9 miles which contain riparian vegetation and mature trees which enhance the scenic quality. Views of the Sierra Nevada foothills to the east are occasionally available on clear days. Expansive views to the west highlight the Vaca Mountains and Coastal Range. These types of landscape views are strongly characteristic of the Sacramento Valley and have contributed to the region's identity.

Buildings associated with farms and duck clubs are commonly raised structures that can withstand flooding. These structures are scattered throughout the bypass. Most of the bypass is kept free of shrubs and trees, except for along the toe drains adjacent to the levees, where riparian vegetation lines the water corridor.

The visual character of the DWSC Levee reach is an appealing and sharp contrast against the Sacramento metropolitan region. Views are moderately high in vividness. The artificial intrusions associated with development, agriculture, and infrastructure are low, but present, resulting in moderate intactness. The visual quality of the area is also moderately high in unification because the landscape is fairly congruent and harmonious in terms of scale, color, and form.

Deep Water Ship Channel East Levee

The DWSC East Levee is located between the Port South Levee reach and the South Cross Canal and serves as a western boundary to the city. Land uses in the city adjacent to this levee reach are primarily newer suburban developments to the north and open space and agricultural production to the south. Although many areas along the levees remain in agricultural production, there has been and continues to be increasing conversion of agricultural land to residential uses. This area is developing in a pattern similar to other cities, radiating out from the larger urban core of the city and spreading southward where vast acreage of agricultural land remains.

The southern portion of the city is planted with predominantly row and field crops or used for livestock grazing (Figure 13.4-2g, Photo 1). A patchwork of agricultural lands and urban development separates this agricultural land from developed areas to the north. When valley haze is at a minimum, there are expansive views of agricultural lands, urban development, and mountains across these fields. Middleground views include the city of Sacramento, distinguished by buildings rising above the tree line, development, or agricultural fields (Figure 3.14-2g, Photo 2). Views from the water and shore are limited by the levees. Scattered trees growing on the levee and along the shore exist throughout this levee reach and add character to foreground views. Background views of the Sierra Nevada foothills and Vaca Mountains occur to the east and west, respectively. These types of landscape views are strongly characteristic of Sacramento and have contributed to the region's identity.

Newer residential development in the northern portion of this levee reach tend to be homogenous in nature, having similar architectural styles, building materials, and plan layouts. This development often lacks a distinctive character from one community to the next. Suburban residences have been constructed at a high density. Typically, these residences are two-story homes with very little space between units (Figure 3.14-2g, Photo 3). Because these residential developments are fairly new, they lack mature vegetation. The density of newer development precludes views beyond the interior of the development, except for residences on the outskirts of the development. These residences have views over the open space as described above. The residences directly adjacent to the levee have unobstructed views from the upper story only.

The visual character of the DWSC East Levee is an appealing and sharp contrast to the city and Sacramento metropolitan region. Views are moderately high in vividness. The artificial intrusions associated with development, agriculture, and infrastructure are moderate to the east, resulting in low to moderate intactness. The visual quality of the area is moderately high in unification because the landscape is fairly congruent and harmonious in terms of scale, color, and form.

Yolo Bypass Levee

The Yolo Bypass Levee is located between the Sacramento Bypass and the DWSC and serves as a western boundary to the city. Land uses within the bypass are primarily agricultural or other open space uses that are compatible with flood control operations (Figure 3.14-2h, Photo 1). Agricultural production is limited to field and row crops. During periods of high flows in the Sacramento River, the bypass may be filled with water. Views from the bypass are expansive when haze is at a minimum. Typical views to the west, north, and south extend over agricultural fields in the foreground to the middleground and background. Views to the east extend over the CHP Academy and industrial portions of the city in the foreground to views of downtown Sacramento in the middleground and background (Figure 3.14-2h, Photo 2 and Photo 3). Most viewers cross the bypass on I-80. The crossing is elevated and crosses the bypass in an east-west orientation. Crossing the bypass from west to east, the high-rise buildings of downtown Sacramento can be seen in the middleground and background, with views of the Sierra Nevada foothills occasionally available on clear days. Crossing from east to west provides views of the western portion of the Sacramento Valley and the Vaca Mountains. These types of landscape views are strongly characteristic of the Sacramento Valley and have contributed to the region's identity.

Buildings associated with farms and duck clubs are commonly raised structures that can withstand flooding. These structures are scattered throughout the bypass. Most of the bypass is kept free of shrubs and trees, except for along the toe drains adjacent to the levees, where riparian vegetation lines the water corridor (Figure 3.14-2h, Photo 4).

The visual character of the bypass is an appealing and sharp contrast to the city and Sacramento metropolitan region. Appealing views of the bypass and Sacramento cityscape present both rural and urban scenes that are attractive. Views are moderately high in vividness. The artificial intrusions associated with development, agriculture, and infrastructure are low, but present, resulting in moderate intactness. The visual quality of the area is also moderately high in unification because the landscape is fairly congruent and harmonious in terms of scale, color, and form.

Sacramento Bypass Levee

The Sacramento Bypass consists primarily of open space and flood conveyance land uses (Figure 3.14-2i, Photo 1). No development or agricultural activities occur within the bypass.



Photo 1. Looking southwest from atop the DWSC East Levee (outside of the project area) toward mature riparian vegetation along the southern most portion of the DWSC West Levee.

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Figure 3.14-2f
Representative Photos of Program Area and Key Views



Photo 1. Looking south from Burrows Avenue. This photo depicts a recently plowed agriculture field typically found in the southern portion of the City limits. Note the riparian vegetation along the horizon lining the South Cross Levee.



Photo 2. Looking northeast from atop the DWSC East Levee. This photo depicts the character of the northern section of this levee reach. Note the detention pond and undeveloped land in the foreground, commercial and high density residential development in the middleground, and downtown Sacramento in the background, distinguished by buildings rising above the commercial development.

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Figure 3.14-2g
Representative Photos of Program Area and Key Views



Photo 3. Looking southeast from atop the DWSC East Levee. This photo depicts the new residential development that abuts the majority of this levee reach. Note the lack of mature trees and close proximity of residences.

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Figure 3.14-2g
Representative Photos of Program Area and Key Views



Photo 1. Looking southwest from atop the Yolo Bypass Levee. This photo depicts the expansive views over the bypass. Note the flooding of the agricultural fields typical during winter and spring. Water in the foreground is the toe drain west of the levee.



Photo 2. Looking southeast over the CHP Academy. This photo depicts the views from atop the northernsection of this levee reach. Downtown Sacramento can be seen in the background, distinguished by buildings rising above the tree line.

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Figure 3.14-2h
Representative Photos of Program Area and Key Views



Photo 3. Looking east from atop the Yolo Bypass Levee. This photo depicts the industrial development surrounding the Port of West Sacramento, typical of the southern section of this levee reach.



Photo 4. Looking west from atop the Yolo Bypass Levee. This photo depicts the riparian vegetation and mature trees that line the toe drain adjacent to this levee reach.

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Figure 3.14-2h
Representative Photos of Program Area and Key Views

Agricultural land, planted with row crops, borders the Sacramento Bypass to the north, southwest, and west. The Sacramento River serves as its eastern boundary, and the CHP Academy and industrial land uses are located to the south. While few activities take place within the bypass (i.e., hunting occurs during the appropriate seasons), its levees are used for recreation.

Viewers using the levees of the bypass have expansive views that, when haze is at a minimum, extend over agricultural fields in the foreground to the middleground and background. The high-rise buildings of downtown Sacramento can be seen in the middleground, rising up above the tree line. Background views to the Sierra Nevada foothills to the east are rarer, while views of the Sutter Buttes to the north are more common (Figure 3.14-2i, Photo 2). Some views are obscured by vegetation along the levees of the bypass and the CHP Academy, limited in certain directions to the foreground, depending on the viewer's location (Figure 3.14-2i, Photo 3). Views also differ seasonally, offering more or fewer views when vegetation is dormant or in leaf.

While the visual quality of the bypass itself is moderate, the views offered from it are moderately high. Appealing views of the bypass and Sacramento cityscape present both rural and urban scenes that are attractive. Views from the Sacramento Bypass levees are moderately high in vividness. The artificial intrusions associated with the surrounding development and infrastructure are moderate, resulting in moderate intactness. The visual quality of the area is also moderate in unification because the landscape is disjunctive in its abrupt changes in land use.

3.14.3 Environmental Consequences

This section describes the visual resource effects associated with the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.14.3.1 Assessment Methods

Using the concepts and terminology described at the beginning of this section, and the criteria for determining effects, the analysis of visual effects of the program is based on:

- direct field observation from vantage points, including neighboring buildings, property, and roadways (conducted November 28, 2007 and February 5, 2009);
- photographic documentation of key views of and from the program reaches taken on November 29, 2007 and February 5, 2009, as well as regional visual context;
- review of project construction drawings; and
- review of the program in regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.

3.14.3.2 Determination of Effects

For this analysis, an effect pertaining to visual resources was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.):

- cause a substantial, demonstrable negative aesthetic effect on a scenic vista or view open to the public;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime public views.

3.14.3.2.1 Professional Standards

According to professional standards, a project may be considered to have a significant effect if it would:

- conflict with local guidelines or goals related to visual quality;
- alter the existing natural viewsheds, including changes in natural terrain;
- alter the existing visual quality of the region or eliminate visual resources;
- increase light and glare in the project vicinity;
- result in backscatter light into the nighttime sky;
- result in a reduction of sunlight or introduction of shadows in community areas;
- obstruct or permanently reduce visually important features; or
- result in long-term (that is, persisting for 2 years or more) significant visual changes or contrasts to the existing landscape as viewed from areas with high visual sensitivity.

3.14.3.3 Effects and Mitigation Measures

3.14.3.3.1 No Action Alternative

To summarize from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue. No potential construction-related effects on visual resources would occur.

In terms of the potential for urbanization and development to be restricted without the program, visual resources are expected to remain similar to existing conditions with the exception of the southern portion of the city. The visual character of the southern city may or may not continue to change as rural and agricultural lands are converted to commercial and residential uses. The visual character of other areas is not expected to substantially change because the areas are generally built out, such as the Port and the Broderick/Bryte and Washington areas, or are dedicated for open space or flood control purposes, such as Sacramento and Yolo Bypasses. Other flood control projects may be implemented, adjacent to locations that fall within the proposed program, and would change the visual character of levees surrounding the city as vegetation is removed to comply with USACE levee vegetation guidance.

Without levee improvements, there is the continued risk of levee failure. A catastrophic levee failure would result in flooding and inundation that could significantly damage existing visual resources



Photo 1. Looking northeast at the Sacramento Weir from within the Sacramento Bypass. Trees along the horizon are on the opposite bank of the Sacramento River, across from the weir.



Photo 2. Looking west along the Sacramento Bypass Levee. This photo depicts background views of the Coast Range, faintly visible on the horizon line.

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Figure 13.4-2i
Representative Photos of Program Area and Key Views



Photo 3. Looking southeast toward the CHP Academy. This photo depicts the mature landscape trees edging the CHP Academy that block middleground and background views in some areas of this levee reach.

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Figure 3.14-2i
Representative Photos of Program Area and Key Views

(such as vegetation). Flood-fight or cleanup activities could present new visual elements similar to those identified below during project construction. In addition, scenic vistas for existing and future recreation facilities could be damaged irreparably or for an extended period of time which would reduce the enjoyment derived by recreationists. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on recreation cannot be quantified based on available information.

In its levee vegetation guidance, USACE has established a woody vegetation-free zone required for operations and maintenance of Federal project levees. Woody vegetation has been allowed to persist within the study area and more broadly throughout the SRFCP in part to provide for the functions and values attributed to riparian vegetation. However, in light of recent levee failures and flooding disasters in the United States (e.g., the flooding related to Hurricanes Katrina and Rita), compliance with the vegetation-free zone will be more strictly adhered to and enforced.

Compliance with the levee vegetation guidance could result in the removal of a substantial amount of vegetation, which would substantially comprise the character and quality of the visual resources in the waterway corridors around the city. Many visual receptors, including pedestrians, bicyclists, equestrians, boaters, and viewers from both sides of the water course are accustomed to the visual character that vegetation contributes to the landscape. Removal of a substantial amount of this riparian vegetation in compliance with the levee vegetation guidance would significantly affect recreation in the program area, similar to Effect VIS-1 described below.

But for areas where a setback levee is proposed, which may allow existing vegetation to be preserved, or where the vegetation is found to be in compliance with USACE levee vegetation guidance, the No Action Alternative and flood and recreation program alternatives could result in effects on riparian vegetation and visual resources that are comparatively similar. However, absent a site-specific study of the application of the USACE levee vegetation guidance, calculation of the magnitude and significance of effects is too speculative based on available information.

3.14.3.3.2 Flood and Recreation Program Alternatives

Effect VIS-1: Affect a Scenic Vista

The study area is not located within a designated scenic vista. However, major roads leading into West Sacramento and downtown Sacramento act as gateways and offer unique vistas of the contrasting landscape features. High rise buildings that tower over agriculture fields and residential development are softened by the lush riparian corridors that line our waterways. This is most evident while traveling eastbound on I-80 across the Yolo Bypass, but local roads such as River Road and Jefferson Boulevard offer the same experience. Program construction and the current USACE levee maintenance policy would require the removal of riparian vegetation (see Effect VIS-4). Without the vegetation buffer, high rise and large industrial buildings would contrast sharply with other landscape features and reduce the quality of the scenic vistas and gateways. Therefore, the proposed program would have a significant effect on undesignated scenic vistas. Because vegetation in many areas would not be allowed to be replanted (see Effect VIS-5), no feasible mitigation is available to reduce the effect to a less-than-significant level. This effect therefore would be significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VIS-1 Finding	With Mitigation
Significant	Significant and unavoidable; no feasible mitigation

Effect VIS-2: Create a New Source of Light or Glare

The program would not add any new permanent source of light or glare. During levee treatment construction, it is expected that some alternatives would be constructed at night, requiring temporary nighttime lighting. Equipment staging areas also would be lit at night for security reasons. Such nighttime lighting would be temporary through the duration of construction. There are many residences on the landside of the levee, within close proximity to the proposed program area. This effect would be significant because some residences would have direct views of the construction adjacent to their homes and to the nighttime lighting associated with the levee alternatives. This would significantly affect their viewshed as these residences are not accustomed to nighttime glare of this degree. This effect would be significant and unavoidable.

Because this effect is significant and unavoidable, those directly affected by this effect would be relocated. As part of the environmental commitment described in Section 2.9, Chapter 2, Alternatives, WSAFCA would provide assistance for residents who are required to relocate during the construction period. WSAFCA would compensate residents for reasonable rent and living expenses incurred due to relocation. Residents would have the right to decent, safe and sanitary housing in accordance with the Uniform Act.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VIS-2 Finding	With Mitigation
Significant	Significant and unavoidable; no feasible mitigation

Effect VIS-3: Affect Scenic Resources along a Designated Scenic Highway

No Federal, state, or locally designated scenic roadways are located within the study area. No effects on scenic resources along a scenic highway would occur. No mitigation is necessary.

Effect VIS-3 Finding	With Mitigation
No effect	N/A

Effect VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities

Construction activities would introduce considerable heavy equipment and associated vehicles, including dozers, graders, cranes, scrapers, and trucks into the views of adjacent residents, recreationists, motorists, and businesses. The equipment would be visible throughout the construction season. Presence of the equipment would temporarily degrade the visual quality of the study area to low vividness, intactness, and unity.

Residential viewer groups in the study area and vicinity are not accustomed to seeing construction activities and equipment, and sensitivity to such effects would be high. Other viewer groups are more accustomed to seeing construction activities and equipment from construction that has occurred in the business parks near the I Street Bridge, daily activities in the industrial areas, and local roadway construction projects and would have low sensitivity to construction effects.

However, because this effect is temporary, would last no longer than the construction duration, and is limited to small portions of the larger river corridor, it would not substantially degrade the visual quality of the study area. In addition, the implementation of an environmental commitment to provide temporary construction barriers, as needed, between construction zones and residences, as described in Section 2.9 of Chapter 2, Alternatives, would make this effect less than significant.

In addition, effects on roadway users would be less than significant because of the short intervals of time that they are in visual contact with the program reaches and familiarity with construction along other roadways in the vicinity.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VIS-4 Finding	With Mitigation
Less than significant	N/A

Effect VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance

Construction of flood program alternatives has the potential to substantially degrade the existing visual character or quality of the sites and surroundings for viewer groups for two reasons: 1) a new levee embankment or flood structure (e.g., flood wall, adjacent levee raise, setback levee) would be present, and 2) construction would require the removal of all vegetation within the construction footprint and within established operations and maintenance vegetation-free zones according to USACE policies. This would mainly affect the levee crown, the landside and waterside levee slopes, and 15 feet from the toe on both sides.

Depending on location and existing conditions, the addition of flood structures could degrade the visual character of the area and obstruct views. For example, a flood wall constructed along the

DWSC West or Port North or South Levee reaches could obstruct views of the DWSC and Barge Canal and change the quality of the visual character of these areas. Since the locations of flood alternatives are not fully developed at this time, a definitive determination is not possible until project level plans are fully developed. However, flood alternatives have the potential of causing a significant and potentially unavoidable effect.

Construction of flood alternatives would require compliance with recent USACE policies regarding woody vegetation on levees. This policy requires that all woody vegetation within the levee prism must be removed and the levee slope maintained free of woody vegetation. The levee slopes would be required to be maintained free of woody vegetation in perpetuity, resulting in the loss of a highly valued, regional aesthetic landscape component. Trees and vegetation located outside of the levee prism, construction footprint, and maintenance zone would remain to the extent possible and retain the high visual quality. This would be evident in areas where the levee is wider and the majority of the vegetation is located directly adjacent to the river outside of the levee prism. The mature vegetation along the levees is characteristic of the region and is a striking, distinctive element in the landscape. The existing vegetation that is removed will be replaced with herbaceous vegetation. An environmental commitment has been made by WSAFCA to minimize vegetation removal to the extent possible (Section 2.9, Chapter 2, Alternatives); however, maintaining the levees void of the characteristic riparian vegetation and mature landscaping would highly degrade the visual character and quality of the area for all viewer groups. No feasible mitigation is available to reduce the effect. This effect would be significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall	▪ Seepage berm
	▪ Levee raise (in place)	▪ Sheet pile wall
	▪ Levee raise (adjacent)	▪ Slurry cutoff wall
	▪ Levee raise (full)	▪ Slope flattening
	▪ Closure structure	▪ Stability berm
	▪ Interior drain	▪ Rock slope protection
	▪ Jet grouting	▪ Setback levee
	▪ Relief wells	▪ Vegetation removal

Affected Reaches

Although different flood program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VIS-5 Finding	With Mitigation
Significant	Significant and unavoidable; no feasible mitigation

Effect VIS-6: Conflict with Local Visual Resource Policies

As mentioned above under the local regulatory policies, the majority of the local jurisdictions have tree preservation ordinances and riverfront master plans where riparian vegetation and mature landscaping are highly desirable components that are greatly valued for the aesthetic qualities they provide. Construction of the new levee embankment would require the removal of all vegetation within the construction footprint and all woody vegetation within the levee prism. This removal of vegetation would conflict with local visual policies. Because vegetation in many areas would not be allowed to be replanted, as discussed in Effect VIS-5, no feasible mitigation is available to reduce the effect. This effect would be significant and unavoidable.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause this effect:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Developed water access	

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, this effect would occur in all nine program reaches.

Effect VIS-6 Finding	With Mitigation
Significant	Significant and unavoidable; no feasible mitigation

Section 3.15
Recreation

3.15.1 Introduction

This section describes the regulatory and environmental setting for recreation, effects on recreation facilities and recreation opportunities that would result from the program, and the mitigation measures that would reduce significant effects.

The key sources of data and information used in the preparation of this section are listed below

- *West Sacramento General Plan*, (City of Sacramento 1990, last amended 2004)
- *City of West Sacramento Parks Master Plan (Smith Group 2003)*
- *Sacramento Riverfront Master Plan*, July 2003
- Dave Shpak, Park Development Manager, City of West Sacramento
- Southport Design Guidelines, April, 1996, last amended November 2005
- *Triangle Specific Plan*, Volume 1, June 1993
- *Washington Specific Plan,* May 1996
- *West Sacramento Bicycle and Pedestrian Path Master Plan*, October 1991and 1995 Addendum
- *Yolo Bypass Wildlife Area Land Management Plan*, June 2008
- *Yolo County General Plan*, July 1983, Open Space and Recreation Element last amended November 2002

3.15.2 Affected Environment

3.15.2.1 Regulatory Setting

3.15.2.1.1 Federal and State

No Federal or state plans, policies, regulations, or laws related to recreation resources apply to the proposed program.

3.15.2.1.2 Local

Broderick Boat Ramp Grant Contract

The City of West Sacramento operates the Broderick Boat Ramp, located along the North Sacramento River levee, under a grant agreement with the Department of Boating and Waterways. This agreement, approved on March 23, 2006, stipulates that the City must obtain prior approval from the Department of Boating and Waterways before closing the boat ramp to public access for any length of time (City of West Sacramento Housing & Community Investment 2006).

City of West Sacramento General Plan

The *West Sacramento General Plan* (City of West Sacramento 1990) identifies the following goals, objectives and policies for the implementation plan.

Recreation and Cultural Resources

- **Goal A:** To establish and maintain a public park system and recreation facilities suited to the needs of West Sacramento residents and visitors.
    - **Policy A12:** The City shall identify appropriate open spaces, including areas within the Central Business District and along the Sacramento River, for development of safe community activity areas.
- **Goal B:** To promote the provision of private recreation facilities and opportunities.
    - **Policy B6:** The City supports the use of the barge canal for aquatic recreational activities, such as sailing, rowing, kayaking, and canoeing, and supports the establishment of a multi-use aquatic facility along the barge canal. Aquatic parks, boat houses, docks, and other support facilities for boating shall be deemed compatible uses along the Deep Water Ship Channel and the barge canal within all land use designations.
- **Goal D:** To provide and encourage, to the fullest extent possible, public access to the Sacramento River and Deep Water Ship Channel for recreation purposes.
    - **Policy D1:** The City shall ensure continuous public access to the Sacramento River for its full length within West Sacramento.
    - **Policy D2:** The City shall seek to ensure continuous public access to the Deep Water Ship Channel, within the limits imposed by safety considerations.
    - **Policy D3:** Linear access to the Sacramento River and Deep Water Ship Channel shall be linked to the city's overall system of parks, recreational pathways, and open space.
    - **Policy D4:** The city shall encourage the development of public and private marinas in appropriate locations on the Sacramento River and along the Deep Water Ship Channel. Siting and development of marinas shall avoid, as much as possible, areas of significant existing riparian vegetation.
    - **Policy D5:** The City shall support and encourage the development of public and private water-oriented park and recreation facilities along the Sacramento River and the Deep Water Ship Channel.
- **Goal E:** To provide a network of pedestrian and bicycle pathways connecting parks and open space areas with other destination points within and beyond the city of West Sacramento.
    - **Policy E2:** The City shall implement a *Riverfront Park Master Plan* that provides for a system of continuous pedestrian and bicycle pathways along the Sacramento River.
    - **Policy E4:** The City shall coordinate the development of the riverfront as envisioned in the 1997 *Sacramento Greenway Plan*.

Natural Resources

- **Goal C:** To protect sensitive native vegetation and wildlife communities and habitat in West Sacramento.

- **Policy C5:** To minimize disturbance to wildlife, the City shall require the provision and maintenance of an adequate setback between significant wetland habitat and adjacent development. The buffer shall be landscaped with native or compatible introduced ornamental vegetation and may be used for passive recreation purposes.
- **Policy C12:** Public access and recreation facilities shall not eliminate or degrade riparian habitat values. Trails, picnic areas, and other developments shall be sited to minimize effects on sensitive wildlife habitat or riparian vegetation.

Transportation and Circulation

- **Goal G:** To promote pedestrian and bicycle travel as alternatives to automobile use.
  - **Policy G7:** To the extent practicable, bicycle and pedestrian pathways shall be included within open space areas and adjacent to waterways.

Urban Structure and Design

- **Goal B:** To enhance the relationship between the City and the Sacramento River.
  - **Policy B2:** The City shall protect and enhance public access to the Sacramento River along the entire riverfront within West Sacramento by providing for development of a continuous pedestrian and bicycle path along the river.
  - **Policy B4:** The City shall promote the development of important visual and scenic areas along the riverfront, including around the barge canal, for public access, including water-related activities.
  - **Policy B5:** The City shall promote and enhance open space and pedestrian links between the river and public schools, parks, and other major open space areas.

City of West Sacramento Parks Master Plan

The *West Sacramento Parks Master Plan* (Parks Master Plan) (Smith Group 2003) outlines the City's goals and policies with regard to the provision of parks and related recreation facilities for West Sacramento residents, and provides an inventory of current and proposed facilities.

As of April 2009, the City oversaw approximately 145 acres of developed parkland (City of West Sacramento 2009a). Based on the 2007 population of 44,928 (California Department of Finance 2007). This represents an 80-acre shortfall from the standard of 5 acres per 1,000 residents established in the General Plan. Based on this ratio, it is estimated that by 2025 population growth in West Sacramento would require the City to have a total of 375 acres of parkland available in order to meet this standard.

The Parks Master Plan lists underutilized assets, including the Sacramento River, DWSC, turning basin, barge canal, natural corridors, and riparian forests that are key opportunities for recreation development and protection. Several areas are targeted as particularly well-suited for park development. Construction of recreation facilities along the study area is proposed as follows:

- **Sacramento River North Levee:** Governors Residence State Park (now the site of the future California Indian Heritage Center), Sacramento River/Barge Canal recreation corridor (entire length of levee reach), Triangle Park Blocks neighborhood park, Stone Lock District, and seven fishing piers.

- **Port North Levee:** Stone Lock District and Sacramento River/Barge Canal recreation corridor.
- **Port South Levee:** Stone Lock District and Sacramento River/Barge Canal recreation corridor.
- **DWSC East Levee:** DWSC recreation corridor (entire length of levee reach).
- **South Cross Levee:** DWSC recreation corridor (entire length of levee reach).
- **Sacramento River South Levee:** Sacramento River/Barge Canal recreation corridor (entire length of levee reach), Stone Lock District, Southport neighborhood park, Southport community park (now called River Community Park), and Southport swim/gym.

Sacramento Riverfront Master Plan

The *Sacramento Riverfront Master Plan* (SRMP) is a collaborative planning document developed by the Cities of Sacramento and West Sacramento along with Yolo and Sacramento Counties and used to guide riverfront development along the Sacramento River. The SRMP places emphasis on improved public open space along the riverfront and enhancement and preservation of riverine, riparian, and upland forest environments to provide a richer experience for the user. Proposed future projects are grouped by implementation time frame from 0 to 16+ years and include extending riverfront trails, completing and constructing riverfront promenades, E Street fishing pier and boat dock, the Stone Lock District, and four non-vehicular bridges across the Sacramento River (Wallace Roberts and Todd 2003).

Solano County General Plan

The *Solano County General Plan* (Solano County Planning Commission 2008) identifies the following goals and policies for the implementation plan:

Resources

Goal RS.G-4: Preserve, conserve, and enhance valuable open space lands that provide wildlife habitat; conserve natural and visual resources; convey cultural identity; and improve public safety.

Sacramento–San Joaquin Delta Policies

Policy RS.P-26: Promote continued recreational use of the land and waters of the Delta, including fishing and boating; ensure needed recreation facilities are constructed, maintained, and supervised; protect landowners from unauthorized recreational uses on private lands; and maximize dwindling public funds for recreation by promoting public private partnerships and multiple uses of Delta lands consistent with the Land Use and Resource Management Plan for the Primary Zone of the Delta.

Recreational Resources

Policy RS.P-42: Encourage the use of existing natural and human-made corridors such as creeks, railroad rights-of-way, and corridors when creating future bike path and trail alignments.

Solano County Park and Recreation Element

Objective 3: Identify, preserve, and manage significant regional recreation and natural areas.

Policy C: The County shall work to protect identified recreation sites and natural resource areas.

Southport Design Guidelines

The Southport Design Guidelines are a component of the overall *Southport Framework Plan* that provides a detailed community concept and design guidelines for development in the Southport area. The community concept is based on a network of pedestrian-friendly villages that offer convenient walking and biking options. In the study area, the community concept includes a marina village connecting to the Sacramento River for water-oriented recreation and boating, a water-oriented community park adjacent to the Sacramento River, and improvements to levee trails along the Sacramento River and DWSC for increased pedestrian, bicycle, and equestrian recreation (City of West Sacramento Planning Department 1996).

Triangle Specific Plan

The *Triangle Specific Plan* (Zimmer Gunsul Frasca 1993) is a comprehensive planning document used to guide development within the "Triangle" area of West Sacramento, now referred to as the Bridge District. The Bridge District is bounded by SR 275, Business 80, and the Sacramento River and includes a small parcel south of Business 80. The Specific Plan has guidelines for using open space corridors and park streets for visual and physical connection to the river and identifies the following policies and guidelines for the waterfront.

Policy 1: The City will provide and encourage continuous public access to the entire length of the Sacramento River waterfront.

Policy 2: The City will establish and maintain a waterfront pathway and river access system as a component of the City's public park system and recreation facilities, suited to the needs of West Sacramento residents and visitors.

Policy 3: The City will promote complementary private development, open space and other facilities and opportunities consistent with public enjoyment of the waterfront during the day and in the evening, seven days a week.

Guideline—Riverfront Parks: Access will be limited to narrow foot trails at select locations. Access through Habitat Zones will not be provided with the exception of pedestrian access trails. Clearing for construction of the pedestrian access trails and placement of utilities shall be limited to the immediate construction corridor. Portions of the riparian habitat outside the immediate construction corridor shall not be cleared, and erosion control measures shall be implemented. Riverfront parks will include terraced steps for informal gathering spaces and an amphitheater zone.

Guideline—Establish a Special Place at the Water's Edge: Create places for public gatherings and contact with the river. Develop areas to allow for flexibility in use and function. Configure pathways on the river bank to create large islands of vegetation and design them to provide cover for a variety of birds, insects and small mammals.

Recreation components of the Specific Plan include the River Walk Promenade, three neighborhood parks, and distributed recreational features. The Promenade will be the focal point of the Bridge District, providing an inviting, attractive multi-purpose venue for waterfront access, bicycle and pedestrian travel, passive recreation, and civic celebrations. At buildout, improvements will consist of a levee-top promenade, terraced waterfront pathways, pier overlooks, on-water gangway and dock, and a central event plaza.

Washington Specific Plan

The *Washington Specific Plan* defines a vision for the future of the Washington Plan Area, a 194-acre urban area near the northeast corner of the city. It is bounded by Tower Bridge Gateway on the south, the Sacramento River on the east, A Street on the north, and portions of 6th and 8th Streets on the west. The *Washington Specific Plan* defines a "Riverfront Special Design District" with recommendations for parks and open space development along the Sacramento River.

The *Washington Specific Plan's* urban design guidelines (Chapter VII) identify taking advantage of the recreational open space and park opportunities along the riverfront as a primary and essential step in redeveloping the Washington area. The Riverfront Park and Trail System is proposed to meet that goal and to take advantage of the riverfront's river views, riparian woodland, vistas of downtown Sacramento, and fishing and boating opportunities. The Riverwalk, portions of which have been built since publication of the *Washington Specific Plan*, will provide a continuous pedestrian and bicycle linkage from Lighthouse Marina development at the north to the barge canal at the south. This trail will be 12 feet wide and paved and incorporate benches, bike rack, tree plantings, multi-purpose event spaces, and thematic pedestrian lighting. For specific design guidelines, the *Washington Specific Plan* incorporates the SRMP by reference.

West Sacramento Bicycle and Pedestrian Path Master Plan

The *West Sacramento Bicycle and Pedestrian Path Master Plan* (Callander Associates 1991) and *Addendum* (City of West Sacramento Parks and Community Services Department 1995) propose future recreation trails, bike paths, lanes, and routes along the majority of the study area. The plan identifies the following relevant objectives and policies:

Objective 2 Use of City Infrastructure: Utilize city infrastructure including streets, street and railroad rights-of-way, and utility and drainage easements for development of bicycle and pedestrian path system.

Policy 2.7: Utilize non-vehicular areas, wherever possible, for locating bicycle and pedestrian facilities away from motor vehicles, to enhance safety and enjoyment and minimize distances between destination points. Utilize Reclamation District rights-of-way and maintenance roads for paths wherever feasible, and negotiate easements for paths as needed.

Objective 3 Recreational Opportunities: Facilitate city-wide and regional recreation opportunities for bicycling, hiking and jogging.

Policy 3.1: Link city parks, schools, riverfront, open space areas, and scenic areas to the system of bicycle and pedestrian paths.

Policy 3.2: Provide a system of continuous bicycle and pedestrian pathways along the Sacramento River and other waterways, where feasible.

Yolo Bypass Wildlife Area Land Management Plan

The *Yolo Bypass Wildlife Area Land Management Plan* (prepared jointly by DFG and the Yolo Basin Foundation) guides the management of habitats, species, appropriate public uses, and programs within the Yolo Bypass Wildlife Area. Specific to recreation, it identifies and guides appropriate, compatible public use opportunities.

Authorized Public Use Element

Goal PU-1: Increase existing and provide new long-term opportunities for appropriate wildlife-dependent activities by the public.

Task 9: Build access points for anglers with limited mobility along East Toe Drain.

Goal PU-3: Coordinate public access to and use of facilities including tour routes, parking areas, Putah Creek, the planned Pacific Flyway Center, and other areas to accommodate a variety of different user groups.

Task 35: Cooperate with the City of West Sacramento in assessing feasibility of access from the east side.

Task 36: Cooperate with agencies promoting regional hiking, bicycle, and equestrian trail connections including Caltrans, Delta Protection Commission, Yolo County, City of Davis, and City of West Sacramento.

Goal PU-8: Facilitate safe use of the Yolo Bypass Wildlife Area by informing the public of potential risks, and also develop an emergency response plan.

Task 5: Restrict access to unsafe areas such as construction zones and at times, active farming areas.

Yolo County General Plan

The *Yolo County General Plan* (Yolo County Community Development Agency 1983) identifies the following goals, objectives, and policies for the implementation plan.

Circulation

Policy CIR-13: Bicycle Routes and Facilities. Yolo County shall promote and ensure opportunities for bicycle use. The following means shall be used to achieve this policy: Encouragement and establishment of bike routes along trails, on levees, along railroad levees, along drainage canals, and along transmission right-of-ways where feasible.

Recreation

Policy REC-7: Urban Waterfront Land Use. Yolo County shall require that a portion of urban waterfront, other than the Port of West Sacramento and existing industrial uses, should be used for water-dependent activities including, but not limited to, recreation, tourism, scenic public walkways, waterview restaurants, marinas, fishing access, small waterfront parks, and interpretation projects with retained and enhanced riparian vegetation and may include related residential development in a proportion established by conditional use permit but not to exceed one-half of the total land area of the project.

Urban waterfront overlay zoning shall be established to locate and define the extent of such areas and shall insure access to the river for all residents.

Open Space and Recreation Element

The revised Yolo County Open Space and Recreation Element (Yolo County Parks and Natural Resources 2002) identifies the following goals, objectives, and policies for the implementation plan:

Objective RO-2: Establishment of a variety of outdoor recreational and educational opportunities along Lower Cache Creek, the Sacramento River, Lower Putah Creek, and within the Yolo Bypass for use by the public.

Policy RP-8: The County shall encourage and support the development of private recreation facilities that preserve scenic and environmentally sensitive resources and that do not result in the creation of land use conflicts.

Policy RP-10: The County shall work with willing landowners to create a continuous corridor of natural open space along Lower Cache Creek, Lower Putah Creek, the Sacramento River and within the Yolo Bypass with provision for limited access at specific locations to recreational and educational uses from a County road or highway. The County shall also consider establishing bicycle access to select areas.

Policy RP-12: Recreational uses shall be clustered at locations along Cache Creek, Lower Putah Creek, and the Sacramento River, in order to minimize habitat disturbance and provide efficient and cost-effective management by the County. All access, whether by road or by trail, shall be through an entry point which can be controlled.

Policy RP-17: The County shall support improved access for bank fishing where safe and adequate parking can be provided and with acquisition of proper rights-of-access from the landowner. Adequate policing, garbage cleanup, sanitation facilities, and fire suppression for such access shall be provided.

Yolo County Oak Woodland Conservation and Enhancement Plan

Many recreationists use the oak woodlands in Yolo County for hiking, bicycling, equestrian, hunting, and other recreation opportunities. The *Yolo County Oak Woodland Conservation and Enhancement Plan* promotes voluntary efforts to conserve and enhance the county's existing oak woodlands, which provide significant aesthetic, ecological, and economic benefits (Yolo County Planning, Resources, and Public Works Department 2007)

3.15.2.2 Environmental Setting

For many years, the levee system around the city of West Sacramento has provided a popular open space venue for informal recreation activities. The views afforded by the levees' elevated height and proximity to the natural areas along the Sacramento River, Sacramento Bypass, Yolo Bypass, and the Sacramento DWSC entice many types of recreationists. Residents use the levees for walking, running, biking, fishing, visiting the waterfront, and for wildlife viewing. In addition to the widespread informal use of the levees themselves, the City of West Sacramento and some private entities operate some formal recreation facilities in the WSLIP study area. More detailed descriptions of the facilities and recreation activities taking place along each levee reach follow below.

Boating is a significant recreational use on the waterways surrounding the city. The Sacramento River is a popular regional waterway for motorized boat use, especially within the urbanized reach of the river flowing by the cities of Sacramento and West Sacramento. The riparian vegetation and mature trees lining much of the river in this stretch, combined with the on-river dining opportunities in the Natomas and Old Town Sacramento areas, provide an attractive boating corridor. West Sacramento is also home to two marinas on the Sacramento River: the Sacramento

Yacht Club and the Sherwood Harbor Marina. The City also operates the Broderick Boat Launching, Park, providing boat ramps and other park amenities.

The calm waters of the DWSC are also a popular boating destination. The River City Rowing Club and the University of California, Davis, crew teams use the DWSC for practice and competition, and other non-motorized boats regularly ply the channel carrying anglers and wildlife viewers. The Lake Washington Sailing Club and the Lake Washington Outboard Club also call the DWSC their home.

Several recreation facilities and opportunities along the left bank of the Sacramento River (on the Sacramento side) are significantly enhanced by views of the mature riparian vegetation along the Sacramento River North and South Levees in West Sacramento. Some of the major facilities and recreation opportunities are Discovery Park, Miller Park, River View Marina, River Bank Marina, Sacramento Marina, Virgin Sturgeon Restaurant and Marina, Le Rivage hotel and marina, and informal recreational use of the levees in the Pocket and Little Pocket areas of Sacramento.

3.15.2.2.1 Sacramento River North Levee

The Sacramento River North Levee sees a variety of recreational uses, both informal and formal. From the I-80 crossing south to the Broderick Boat Ramp, there is a fairly wide vegetated berm between the levee and the river, and this berm attracts many visitors for fishing, walking, running, biking, and visiting the waterfront. Although access in this area technically is considered trespassing, the City's Police Department and Reclamation District 811 generally do not prosecute for informal recreational use (Shpak pers. comm. 2009). There is very little recreational use of the levee north of the I-80 crossing, as access is restricted by private property and the City's water treatment plant. Additionally, very little recreational use occurs on or near the levee south of the Pioneer Bridge because of the presence of industrial facilities and a steep river bank. While the undeveloped riverfront between the Tower and Pioneer Bridges experiences some recreational visitation, the main recreational use of this area is parking for River Cats games and other events at Raley Field.

Formal recreation facilities along the Sacramento River North Levee are listed below.

- **Bryte Park**. Bryte Park is a City of West Sacramento community park, the northern edge of which abuts the landside toe of the Sacramento River North Levee just west of the Riverbank Elementary School. Numerous amenities are available to the West Sacramento community at Bryte Park, including four softball diamonds (two of which are lighted) one hardball diamond, eight soccer fields, full court basketball, football facilities, walking paths, a track, a picnic area with barbecues, a tot lot, a fitness course, restrooms, and the Club West Teen Center, home to an afterschool teen program.
- **Broderick Boat Ramp**. This double-ramp boat launch and picnic facility is operated by the City of West Sacramento and is located on the waterside of the Sacramento River North Levee, just downstream from the Sacramento River's confluence with the American River. It is a popular regional destination because it is the only free, vehicle-accessible public boat ramp in the Sacramento metropolitan area. The City completed improvements to the launch capacity of the ramp and expanded the picnic and restroom facilities during summer 2009 (Shpak pers. comm. 2009).
- **River Walk Park**. River Walk Park, a City of West Sacramento community park, is the City's main event venue on the river. The City frequently holds special events at this park during the summer months (Shpak pers. comm. 2009). River Walk Park features a paved pedestrian

promenade along the length of the park (from I Street Bridge south to the Tower Bridge) studded with educational signs discussing the settlement of Sacramento and the river's natural habitat, as well as barbecues, picnic areas, and large expanses of turf with a view of Old Town Sacramento across the river. The City has secured funding to extend the promenade 250 feet to the south of the Tower Bridge if the project is built by summer 2011.

3.15.2.2.2 Sacramento River South Levee

For most of its length, the waterside of the Sacramento River South Levee is fairly steep but supports a mature riparian forest that is attractive to many recreationists. South River Road, a two-way paved road, tops the Sacramento River South Levee for most of its extent through the study area. Although South River Road is considered a rural route and features very narrow shoulders with no designated bike lane, it remains a popular bicycling corridor in the region. South River Road also provides easy access for fishing along the Sacramento River, making fishing a very widespread informal recreation activity along the Sacramento River South Levee. On a smaller scale, pedestrians and equestrians also use South River Road.

Located landward of the Sacramento River South Levee, toward its northern end, is an area locally known as the Honda Hills. The area was formerly a USACE dredge spoils site, and spoils placement has left a rolling, uneven terrain that has since been colonized by trees and vegetation. The site is now owned by the City of West Sacramento and is informally used by riders of off-highway vehicles, equestrians, and pedestrians.

Bees Lakes, a heavily wooded natural area surrounding two fairly large ponds, sits just west of the Sacramento River South Levee approximately 2 miles south of the barge canal along South River Road. Because of the thick vegetation, access is difficult, but it is a popular area for nature viewers and paintball enthusiasts (Shpak pers. comm. 2009).

Formal recreation facilities along this levee stretch are listed below.

- **Delta Gardens Park**. Delta Gardens Park is a City of West Sacramento neighborhood park located approximately 0.5 mile south of the barge canal. The easternmost extent of the park is about 150 feet from the landside toe of the Sacramento River South Levee. Park amenities include youth and tot play structures, picnic areas, barbecues, half-court basketball, a climbing boulder, a performance patio and a turf play area (City of West Sacramento Department of Parks and Recreation 2009b).
- **Sacramento Yacht Club**. The Sacramento River Yacht Club is a non-profit, member-owned private club located on the waterside of the Sacramento River South Levee approximately 2 miles south of the barge canal. Facilities at the Yacht Club include a clubhouse, bar, galley, marina, and covered slips. The public (non-members) can rent facilities on days when it is not in private use.
- **Sherwood Harbor Marina and RV Park.** The Sherwood Harbor Marina and RV Park is a privately owned public marina and RV park with 130 boat slips and 44 RV sites. It is located approximately 0.5 mile south of the Sacramento Yacht Club on the waterside of the Sacramento River South Levee and is the only riverfront RV park in the Sacramento metropolitan area. Recreation opportunities at the Marina include camping, boating (motor boating, kayaking, and canoeing), picnicking, fishing, swimming, wildlife viewing, and walking. Facilities include restrooms, a pump-out station, fueling station, convenience store, bait shop, and laundry facilities (Sacramento River Recreational and Public Access Guide 2009).

3.15.2.2.3 Port North Levee

Recreational use along the Port North Levee is very limited because most of the land is owned by industrial enterprises (including the Port of West Sacramento) and access is restricted. Some trespassers access the barge canal at the eastern end of the Port North Levee through holes in the fencing at the terminus of South River Road, using the area for fishing and visiting the waterfront. A similar situation exists at the opposite end of the Port North Levee, with visitors accessing the dead-end streets at the western edge of the city and traveling south along the Yolo Bypass Levee to fish and visit the waterfront on the western end of the Port North Levee. Some fishing also occurs off of the Jefferson Boulevard bridges and the riverbanks immediately adjacent to Jefferson Boulevard (Shpak pers. comm. 2009).

Formal recreation facilities along this levee stretch are listed below.

- **River City Rowing Club and UC Davis Crew**. The River City Rowing Club and the University of California, Davis, crew teams operate out of the Port of West Sacramento, using the Port's calm waters to practice and compete. Both groups' facilities are located on the waterside of the Port North Levee, along the edge of the turning basin.
- **Lake Washington Sailing and Outboard Clubs**. These private groups provide membership-only access to the Port of Sacramento. Their facility is located next to the River City Rowing Club, at the edge of the turning basin.
- **Sam Combs Park**. Sam Combs Park is a City of West Sacramento neighborhood park located just to the north of the Port North Levee near Jefferson Boulevard. Park facilities include barbecues, horseshoe pits, a tot lot, walking paths, restrooms, and a fenced off-leash dog play area.

3.15.2.2.4 Port South Levee

Most of the recreational use along the Port South Levee is informal, except for hand-portaged boating, fishing, walking, and biking at the Barge Canal Recreational Access, which is described below. The western third of the Port South Levee runs through industrial properties, and the middle third of the levee is on property owned by the Port of West Sacramento. Any recreational use of the levee in those areas technically is considered trespassing, but informal recreational uses occur there nonetheless; these uses are mainly fishing, picnicking, walking, running, and biking.

The Honda Hills area, described above, is located just south of the eastern end of the Port South Levee. As previously mentioned, the site is owned by the City of West Sacramento and is informally used by riders of off-highway vehicles, equestrians, and pedestrians. The eastern end of the Port South Levee itself is informally used for fishing and waterfront visitation (Shpak pers. comm. 2009).

One formal recreation facility is located along this levee stretch.

- **Barge Canal Recreational Access**. The Barge Canal Recreational Access provides a formal access point for the Port South Levee at the western end of the Jefferson Boulevard/South River Road intersection. Facilities at the site include a hand-carry boat ramp, an approximately 0.25-mile-long walking/biking trail along the Port South Levee, picnic tables, benches, interpretive panels about environmental resources and the Port of West Sacramento, and off-street vehicle parking.

3.15.2.2.5 South Cross Levee

There is very little recreational use of the South Cross Levee, as the levee extends through private property. Several of the landowners have erected fences across the levee, preventing public access.

3.15.2.2.6 DWSC East Levee

The DWSC East Levee is closed to vehicular access north of the pump station. No formal recreation facilities exist on the levee; however, the levee and its wide waterside berm are an attractive location for a number of informal recreation activities. Frequent recreational uses of the levee and waterside berm include walking, running, wildlife viewing, picnicking, biking, and fishing. The levee and berm in this area are on private property, so public use technically is considered trespassing, although the City of West Sacramento Police Department and Reclamation District 900 do not prosecute for non-motorized use (Shpak pers. comm. 2009).

3.15.2.2.7 DWSC West Levee and Yolo Bypass Levee

Along the west side of the Yolo Bypass Levee and the upper portion of the DWSC West Levee lies the Yolo Bypass Wildlife Area, which comprises approximately 16,770 acres of managed wildlife habitat and agricultural land within the Yolo Bypass. The Yolo Bypass Wildlife Area is unique in the way agriculture, wildlife habitat, and flood protection objectives are achieved in a manner compatible with providing ample opportunities for public access, recreation, and natural resource education. Recreation activities in the Wildlife Area include environmental education and interpretation programs, hunting, fishing, wildlife viewing, nature photography, hiking, and the collection of native plant materials for cultural use by Native Americans.

Recreation activities that occur adjacent to the Yolo Bypass Levee and the DWSC West Levee are primarily hunting, fishing, and wildlife viewing. Waterfowl and pheasant are the most popular game species hunted at the Wildlife Area, but visitors also hunt other upland game species, including dove. The hunting season at the Wildlife Area traditionally runs from early September through the end of January each year, although the hunting season often is interrupted by seasonal flooding of the Yolo Bypass. The East Toe Drain, which abuts the Yolo Bypass Levee and DWSC West Levee, is a popular fishing spot in the Wildlife Area. Game species fished in the East Toe Drain include sturgeon, catfish, black bass, and striped bass. During the non-hunting season, several walking trails are open for wildlife viewing near the DWSC West Levee. A rich array of wildlife uses the Wildlife Area, including more than 200 known species of birds, many mammal species, and large numbers of fish, amphibians, and invertebrates (California Department of Fish and Game and Yolo Basin Foundation 2008).

A minor amount of recreational use of the Yolo Bypass and DWSC West Levees occurs from the West Sacramento side. Access is gained from the streets that dead-end into the Yolo Bypass Levee in West Sacramento south of I-80, and visitors travel south along the Yolo Bypass Levee to the DWSC West Levee. Use is generally limited to fishing in the DWSC and east toe drain and visiting the waterfront.

Formal recreation facilities along this levee stretch are listed below.

- **Yolo Causeway Bicycle Path**. The Yolo Causeway Bicycle Path crosses over the Yolo Bypass Levee just north of I-80, connecting with the I-80 infrastructure just west of the levee. This bicycle path is a part of a larger bicycle corridor that connects Davis with Sacramento. The corridor is extremely popular with both recreational bicyclists and commuters.

- **Roland Hensley Bike Park**. The Roland Hensley Bike Park is a City of West Sacramento Mini Park and bicycle staging area that also connects the Yolo Causeway Bicycle Path to West Capitol Avenue. It provides two connection routes: directly from the park to West Capitol Avenue, and via a class one bicycle lane that runs along the Yolo Bypass Levee's toe for approximately 1,200 feet, joining up with West Capitol Avenue farther east. The park itself features a turf picnic area and drinking fountains.

3.15.2.2.8 Sacramento Bypass Levee

Very little known recreational use occurs in the vicinity of the Sacramento Bypass Levee. Occasional visitors park in the gravel area just south of the Sacramento Weir and west of Old River Road and walk into the Sacramento Bypass to fish (Shpak pers. comm. 2009). There are no formal recreation facilities on the Sacramento Bypass Levee.

3.15.3 Environmental Consequences

This section describes recreation effects associated with the program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each discussion.

3.15.3.1 Assessment Methods

Potential effects on recreation related to construction or operation are considered at a program level. Effects on recreation related to implementation of the program were evaluated qualitatively. Generally, construction activities could result in a short-term loss of recreation opportunities by disrupting use of recreation areas or recreational boating corridors. A long-term effect could occur if a recreation opportunity is eliminated or the quality of that opportunity is severely reduced as a result of permanent program-related structures or operations. Long-term beneficial effects could occur if new or enhanced recreation opportunities are created through implementation of the program.

3.15.3.2 Determination of Effects

For this analysis, an effect pertaining to recreation was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.):

- increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated;
- include recreation facilities or require the construction or expansion of recreation facilities that might have a significant physical effect on the environment;
- substantially restrict or reduce the availability or quality of existing recreation opportunities in the project vicinity; or
- implement operational or construction-related activities related to the placement of project facilities that would cause a substantial long-term disruption of any institutionally recognized

recreation activities. Institutionally recognized recreation activities are those associated with an established publicly or privately operated recreation facility, or those actively administered or promoted by a public or private entity.

3.15.3.3 Effects and Mitigation Measures

3.15.3.3.1 No Action Alternative

To summarize Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection resulting in continued or even potentially increased risk of catastrophic flooding of the city. Current levee operations and maintenance activities would continue. No potential construction-related effects on recreation facilities would occur.

Existing recreation opportunities in the study area are expected to remain unchanged under the No Action Alternative. Recreational use of the levees, riverbank, parks, and other facilities would continue as established. The City does not plan to move forward with development of any recreational elements on or near the city's levees without prior implementation of necessary levee upgrades (Shpak Pers. Comm. 2009). Development of new recreational opportunities on or adjacent to levees identified in the City's planning documents would therefore not occur under the No Action Alternative. However, no substantial increase in use of existing recreation facilities should occur under the No Action Alternative, since further development (and further population growth) in West Sacramento could be halted under the No Action Alternative if the city's flood hazard designation is changed, as described in Chapter 2, Alternatives.

Without levee improvements, the risk of levee failure would continue and could even increase, as described in Chapter 2, Alternatives. A catastrophic levee failure would result in flooding and inundation that could significantly damage existing facilities and infrastructure, and erode soil, uproot plants, and otherwise damage substrate by hydraulic force. This would render recreation facilities, informal recreation areas, and trails unusable until cleanup and restoration activities could be undertaken. It is possible that after a catastrophic flood event, recreation facilities may never be fully restored to their former condition, permanently reducing the quality and/or quantity of recreation opportunities in the area. In addition, scenic vistas for existing and future recreation facilities could be damaged irreparably or for an extended period of time which would reduce the enjoyment derived by recreationists. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on recreation cannot be quantified based on available information.

In its levee vegetation guidance, USACE has established a woody vegetation-free zone required for operations and maintenance of Federal project levees. Woody vegetation has been allowed to persist within the study area and more broadly throughout the SRFCP in part to account for the functions and values attributed to riparian vegetation. However, in light of recent levee failures and flooding disasters in the United States (e.g., the flooding related to Hurricanes Katrina and Rita), compliance with the vegetation-free zone will be more strictly adhered to and enforced.

Compliance with the levee vegetation guidance could result in the removal of a substantial amount of vegetation, including vegetation that comprises riparian habitat and supports fish and wildlife populations. Many recreation activities rely on or are significantly enhanced by the presence of mature woody vegetation. Anglers rely on trees to provide shade during fishing activities, and wildlife viewers are attracted to areas with mature woody vegetation because of the wealth of

wildlife such vegetation supports. Many other users, including pedestrians, bicyclists, equestrians, and boaters also rely on this woody vegetation for shade, and for the visual character it contributes to the landscape. Removal of a substantial amount of this riparian vegetation in compliance with the levee vegetation guidance would significantly affect recreation in the program study area, similar to Effect REC-3 described below.

For areas where a setback levee is proposed under the WSLIP, which may allow existing vegetation to be preserved, or where the vegetation is found to be in compliance with USACE levee vegetation guidance, the No Action Alternative and flood and recreation program alternatives could result in effects on riparian vegetation that are comparatively similar. However, absent a site-specific study of the application of the USACE levee vegetation guidance, calculation of the magnitude and significance of effects are too speculative based on available information.

3.15.3.3.2 Flood and Recreation Program Alternatives

Effect REC-1: Temporary Disruption of Recreation Opportunities during Construction

Construction activities associated with implementation of the program have the potential to temporarily disrupt recreation activities occurring in the local area. This effect is discussed as it relates to each reach in the Affected Reaches section below.

Program Alternatives Associated with This Effect

Implementation of all alternatives could cause Effect REC-1.

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells ▪ Seepage berm	▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ DWSC closure structure ▪ Setback levee ▪ Vegetation removal
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Construction activities could temporarily affect recreation in all of the program reaches, except for the South Cross Levee, as there is currently no recreational use of the area.

Sacramento River North Levee

In addition to the formal recreation facilities located along the Sacramento River North Levee (Bryte Park, the Broderick Boat Ramp, and River Walk Park), many informal recreation activities occur along the levee and waterside berm, including fishing, walking, biking, running, and visiting the

waterfront. Temporary disruption of these activities would occur during construction activities when the levee crown and adjacent construction and staging areas are closed to public access. Even if the recreation areas themselves are not closed, proximity to construction equipment and activities may degrade recreational experiences. However, this effect is temporary and there are alternative locations for these types of recreation activities in the city. With implementation of the environmental commitment requiring notification of construction area closure (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this temporary effect would be less than significant. No mitigation is required. A discussion of temporary obstruction of access to local marina or boat launch facilities is located under Effect REC-2, below.

Effect REC-1 Finding—Sacramento River North Levee	With Mitigation
Less than significant	N/A

Sacramento River South Levee

In addition to the formal recreation facility (Delta Gardens Park) located along the landside of the Sacramento River South Levee, many informal recreational activities occur along the waterside of the levee. Fishing from the riverbank and biking along South River Road are very popular activities in this stretch, and the levee also plays host to pedestrians, equestrians, and visitors to the waterfront. The area west of the landside toe at the northern end of the Sacramento River South Levee is a popular spot for off-highway vehicle use, as well as equestrian and pedestrian use. Paintball enthusiasts utilize the thickly forested area around Bees Lakes, which sit at the landside toe of the levee 2 miles south of the barge canal.

Temporary disruption of these activities would occur during construction activities when the levee crown and adjacent construction and staging areas are closed to public access. Even if the recreation areas themselves are not closed, proximity to construction equipment and activities may degrade recreational experiences. However, this effect would be temporary and there are alternative locations for these types of recreation activities within the city. With implementation of the environmental commitment requiring notification of construction area closure (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this effect would be less than significant. No mitigation is required.

Effect REC-1 Finding—Sacramento River South Levee	With Mitigation
Less than significant	N/A

Port North Levee

In addition to the formal recreation facility (Sam Combs Park) located along the landside of the Port North Levee, UC Davis and the River City Rowing Club operate rowing facilities and the Lake Washington Sailing and Outboard Clubs operate private water access areas out of the Port of West Sacramento. Other recreational use on or near the Port North Levee is very limited, because most of the land is owned by industrial enterprises and access is restricted.

Temporary disruption of these activities could occur during construction activities when the levee crown and adjacent construction and staging areas are closed to public access. Recreational boating on the barge canal and activities that take place in Sam Combs Park may be indirectly affected by

proximity to construction equipment and construction activities that could degrade recreational experiences.

However, this effect would be temporary. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities, and the environmental commitment to coordinate construction periods with the port of west Sacramento to ensure access to the Port (where the UC Davis and River City Rowing Club facilities and Lake Washington Sailing and Outboard Clubs are located) remains open during construction(both described in Section 2.9, Chapter 2, Alternatives) , this effect would be less than significant. No mitigation is required.

Effect REC-1 Finding—Port North Levee	With Mitigation
Less than significant	N/A

Port South Levee

Much of the recreation activity along the Port South Levee occurs at the Barge Canal Recreational Access. Anglers and recreational boaters use the boat launch facility to hand-launch their vessels and a significant number of anglers cast their lines from under the mature oak trees on the bank. Effects of construction activities on the boat launch facility are explored below under Effect REC-2. Some recreation activity occurs along the western two-thirds of the Port South Levee (mostly fishing, picnicking, walking, running, and biking), but these uses are technically considered trespassing since the property is in private or Port ownership. Fishing and waterfront visitation occur along the levee east of Jefferson Boulevard, and the area south of the levee's eastern end is used by pedestrians and riders of off-road vehicles and horses.

Temporary disruption of these activities would occur during construction activities when the levee crown and adjacent construction and staging areas are closed to public access. Even if the recreation areas themselves are not closed, proximity to construction equipment and activities may degrade recreational experiences. However, this effect is temporary and there are alternative locations for these types of recreation activities within the city. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this effect would be less than significant. No mitigation is required.

Effect REC-1 Finding—Port South Levee	With Mitigation
Less than significant	N/A

DWSC West Levee

Very little recreation activity occurs on the DWSC West Levee because it s relatively inaccessible to the public. As described above, visitors must travel through the industrial portion of West Sacramento and down the Yolo Bypass Levee to access the DWSC West Levee. However, a number of recreation activities occur within sight of the DWSC Levee in the adjacent Yolo Bypass Wildlife Area. These activities include hunting, wildlife-viewing, and fishing in the east toe drain, which is located along the landside toe of the DWSC Levee.

Temporary disruption of recreation opportunities on the levee itself would occur during construction activities when the levee crown and adjacent construction and staging areas are closed to public access. Recreation activities in the Yolo Bypass Wildlife Area may be affected by proximity to construction equipment and noises that could degrade recreational experiences.

However, this construction-related effect would be temporary and there are alternative locations for these types of recreation activities within the Yolo Bypass Wildlife Area. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this effect would be less than significant. No mitigation is required.

Effect REC-1 Finding—DWSC West Levee	With Mitigation
Less than significant	N/A

DWSC East Levee

Although there are no formal recreation facilities located along the DWSC East Levee, many informal recreation activities occur along the levee and waterside berm, including walking, running, wildlife viewing, picnicking, biking, and fishing. Temporary disruption of these activities would occur during construction when the levee crown and adjacent construction and staging areas are closed to public access. Even if the recreation areas themselves are not closed, proximity to construction equipment and activities may degrade recreational experiences. However, this effect is temporary and there are alternative locations for these types of recreation activities within the City. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this effect would be less than significant. No mitigation is required.

Effect REC-1 Finding—DWSC East Levee	With Mitigation
Less than significant	N/A

Yolo Bypass Levee

Informal recreational use of the Yolo Bypass Levee is very limited—the levee is mainly used as an access route to the DWSC West levee. However, the Yolo Causeway Bicycle Path, which crosses the Yolo Bypass Levee just north of I-80, is part of an extremely popular regional bicycle corridor connecting Davis with Sacramento. The Roland Hensley Bike Park, located at the toe of the levee, serves as a staging area and connects the Yolo Causeway Bicycle Path to West Capitol Avenue.

Temporary disruption of the bicycle corridor and any informal uses may occur during construction activities. Because informal use of the area is very limited, and WSAFCA will implement the environmental commitment requiring notification of construction area closure (described in Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, temporary disruption of informal uses is considered less than significant.

However, if construction activities require the closure of the Yolo Causeway Bicycle Path or the trail connecting it with West Capitol Avenue, a significant number of recreational bicyclists and

commuters would be significantly affected. There are no alternative bicycle routes crossing the Yolo Bypass. This effect is considered significant, but would be reduced to a level of less than significant with implementation of Mitigation Measure REC-MM-1, described below.

Effect REC-1 Finding—Yolo Bypass Levee	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure REC-MM-1: Temporarily Re-Route Yolo Causeway Bicycle Path

If closure of the Yolo Causeway Bicycle Path or the trail connecting it with West Capitol Avenue is necessary, WSAFCA will provide a safe alternative route. This alternative route will be well marked and will provide bicyclists with a way to access the bicycle lanes on the I-80 infrastructure, ensuring that a bicycle connection between Davis and Sacramento remains uninterrupted.

Sacramento Bypass Levee

No formal recreation facilities are located along the Sacramento Bypass Levee, although occasional visitors use the levee to access the bypass itself for fishing or wildlife viewing. Temporary disruption of access along the Sacramento Bypass Levee would occur during construction activities when the levee crown and adjacent construction and staging areas are closed. Even if the recreation areas themselves are not closed, proximity to construction equipment and activities may degrade recreational experiences. However, this effect is temporary and there are alternative locations for fishing within the city. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this effect would be less than significant. No mitigation is required.

Effect REC-1 Finding—Sacramento Bypass Levee	With Mitigation
Less than significant	N/A

Effect REC-2: Temporary Obstruction of Access to Marina or Boat Launch Facilities

Construction activities along the Sacramento River North, Sacramento River South, and Port South levees could temporarily obstruct access to local marina or boat launch facilities. This effect is discussed as it relates to each reach.

Program Alternatives Associated with This Effect

Implementation of alternatives that may require road closures or closure of the levee crown in the vicinity of marinas or boat launch facilities could cause Effect REC-2. These alternatives are as follows:

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells	▪ Seepage berm ▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ DWSC closure structure ▪ Setback levee
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Sacramento River North Levee

The Broderick Boat Ramp, located on the waterside of the Sacramento River North Levee, is West Sacramento's only vehicle-accessible boat ramp, and provides the Sacramento region's only free, vehicle-accessible boat launch facility. The agreement for grant funding acquired by the City to upgrade the boat ramp facilities stipulates that the City must obtain prior approval of the Department of Boating and Waterways before closing the facility to any recreational vehicle.

Visitors must use the levee-top road (Levee Road) to access the boat ramp, but temporary closure of Levee Road may be necessary during program construction activities. Alternatives proposed in the Sacramento River North Levee reach that may require road closure are adjacent levee raise, full levee raise, in-place levee raise, rock slope protection, sheet pile wall, slope flattening, slurry cutoff wall, closure, jet grouting, and recreation elements. Closure of the region's only free boat launch facility would conflict with the City's Department of Boating and Waterways grant agreement and reduce access to recreational boating opportunities in the project vicinity. However, with implementation of the environmental commitments to preserve marina and boat launch access and to obtain approval for Broderick Boat Ramp closure (described in Section 2.9, Chapter 2, Alternatives), this effect would be less than significant. No mitigation is required.

Effect REC-2 Finding—Sacramento River North Levee	With Mitigation
Less than significant	N/A

Sacramento River South Levee

The Sacramento Yacht Club and the Sherwood Harbor Marina and RV Park are both located on the waterside of the Sacramento River South Levee. These are the only two marinas located in West Sacramento. Both offer a large number of boat slips, and Sherwood Harbor is the only riverfront RV park in the Sacramento metropolitan area. Visitors must use the levee-top road (South River Road)

to access the marinas, but temporary closure of the levee road may be necessary during program construction activities. Alternatives proposed in the Sacramento River South Levee reach that may require road closure are adjacent levee raise, full levee raise, in-place levee raise, relief wells, rock slope protection, setback levee, slope flattening, slurry cutoff wall, stability berm, and recreation elements. Closure of the City's only marinas would substantially reduce the availability of existing recreational boating opportunities in the project vicinity. However, with implementation of the environmental commitment to preserve marina and boat launch access (described in Section 2.9, Chapter 2, Alternatives), this effect would be less than significant. No mitigation is required.

Effect REC-2 Finding—Sacramento River South Levee	With Mitigation
Less than significant	N/A

Port South Levee

The Barge Canal Recreational Access provides a free, non-motorized boat ramp that is used on a daily basis by anglers and other boaters to launch their craft and access the waters of the barge canal and DWSC. The ramp itself slopes toward the water along the waterside of the Port South Levee, and boaters must carry their boats across the levee to access the ramp. Construction activities and the presence of construction equipment may block access to the ramp during program construction activities. Alternatives proposed in the Port South Levee reach that may block access to the ramp are flood wall, adjacent levee raise, full levee raise, in-place levee raise, slope flattening, slurry cutoff wall, closure, and recreation elements.

Because the boat ramp at the Barge Canal Recreational Access is the only public boat access to the barge canal or DWSC, temporary closure of this facility would block public boating access to these waters. However, with implementation of the environmental commitment to preserve marina and boat launch access (described in Section 2.9, Chapter 2, and Alternatives), this effect would be less than significant. No mitigation is required.

Effect REC-2 Finding—Port South Levee	With Mitigation
Less than significant	N/A

Effect REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor

All flood program alternatives would follow USACE's policies regarding vegetation on levees. This would require removal of a substantial amount of mature trees and vegetation from the banks of many of the levees in the study area, as the new policy forbids woody vegetation on the slopes and crown of the levee or within 15 feet of the waterside and landside levee toes. These zones would be maintained free of woody vegetation in perpetuity.

Many recreation activities rely on or are significantly enhanced by the presence of mature woody vegetation. Anglers rely on trees to provide shade during fishing activities, and wildlife viewers are attracted to areas with mature woody vegetation because of the wealth of wildlife such vegetation supports. Many other users, including pedestrians, bicyclists, equestrians and boaters also rely on this woody vegetation for shade, and for the visual character it contributes to the landscape (visual effects of permanent vegetation removal are discussed in Section3.14, Visual Resources).

The effect on recreation caused by compliance with USACE vegetation policy is discussed as it relates to each reach in the Affected Reaches section below.

Program Alternatives Associated with This Effect

Implementation of any of the flood program alternatives could cause Effect REC-3.

Program	Alternative	
Flood	▪ Flood wall ▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Closure structure ▪ Interior drain ▪ Jet grouting ▪ Relief wells ▪ Seepage berm	▪ Sheet pile wall ▪ Slurry cutoff wall ▪ Slope flattening ▪ Stability berm ▪ Rock slope protection ▪ DWSC closure structure ▪ Setback levee ▪ Vegetation removal

Affected Reaches

Compliance with USACE vegetation policy would affect recreation in all of the program reaches, except for the South Cross Levee, as there is currently no recreational use of the area.

Sacramento River North Levee

Recreational uses of the areas along the Sacramento North Levee are quite diverse, and the majority of these uses are tied to the mature riparian forest that characterizes a large stretch of the levee. These uses include fishing, wildlife viewing, walking, bicycling, horse riding, and boating. Permanent loss of the woody vegetation on and within 15 feet of the Sacramento River North Levee would substantially reduce the quality of existing recreation activities in the area, and is therefore considered significant. No feasible mitigation is available to reduce this effect to a lesser level. This effect could occur under any of the flood alternatives proposed for the Sacramento River North Levee, which are adjacent levee raise, full levee raise, in-place levee raise, rock slope protection, sheet pile wall, slope flattening, slurry cutoff wall, closure, and jet grouting.

Effect REC-3 Finding— Sacramento River North Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

Sacramento River South Levee

A narrow band of mature riparian forest currently exists on and within 15 feet of the waterside slope of the Sacramento River South Levee. This forest is enjoyed by recreationists for shade, wildlife viewing opportunities, and for its visual character. Permanent loss of the woody vegetation on and within 15 feet of the Sacramento River South Levee would substantially reduce the quality of existing recreation activities in the area, and is therefore considered significant. No feasible mitigation is available to reduce this effect to a lesser level. This effect could occur under most of the flood alternatives proposed for the Sacramento River South Levee, including adjacent levee raise, full levee raise, in-place levee raise, relief wells, rock slope protection, slope flattening, slurry cutoff

wall, stability berm. However, the finding for this effect would be different for a setback levee in this reach, and is explored below.

Effect REC-3 Finding—Sacramento River South Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

Setback Levee on the Sacramento River South Levee

Construction of a setback levee in the Sacramento River South Levee reach would move the official levee (and vegetation maintenance requirements) landward, allowing the mature riparian vegetation on and near the waterside of the existing levee to remain. There would be very little long-term reduction in quality of existing recreation opportunities. This effect would be less than significant. No mitigation is required.

Effect REC-3 Finding—Setback Levee, Sacramento South Levee	With Mitigation
Less than significant	N/A

Port North Levee

Permanent loss of the woody vegetation on and within 15 feet of the Port North Levee would substantially reduce the quality of existing recreation activities in the area, specifically for boaters on the barge canal who use the mature riparian vegetation for fishing, shade, and wildlife-viewing. This effect is considered significant. No feasible mitigation is available to reduce this effect to a lesser level. This effect could occur under both of the flood alternatives proposed for the Port North Levee, which are a flood wall and a closure structure.

Effect REC-3 Finding—Port North Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

Port South Levee

Many of the recreation activities that occur along the Port South Levee, especially those activities that occur at the barge canal access, rely on or are significantly enhanced by the presence of mature woody vegetation. Permanent loss of the woody vegetation on and within 15 feet of the Port South Levee would substantially reduce the quality of existing recreation activities in the area, and is therefore considered significant. No feasible mitigation is available to reduce this effect to a lesser level. This effect could occur under any of the flood alternatives proposed for the Port South Levee, which are flood wall, adjacent levee raise, full levee raise, in-place levee raise, slope flattening, slurry cutoff wall, and closure structure.

Effect REC-3 Finding—Port South Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

DWSC West Levee

The DWSC West Levee is, in general, already maintained in a manner close to the new USACE standard for vegetation on levees, and full compliance with the policy would not require the removal of a substantial amount of woody vegetation. However, an adjacent levee raise and a full levee raise are proposed as flood protection alternatives along this levee stretch, each of which would require the levee footprint to be expanded and therefore extend the zone that must be maintained free of woody vegetation. This could result in the removal of areas of existing riparian forest, reducing the quality of existing recreation activities in the area, and is therefore considered significant. No feasible mitigation is available to reduce this effect to a lesser level.

Effect REC-3 Finding—DWSC West Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

DWSC East Levee

Although there is little mature woody vegetation along the DWSC East Levee, the cottonwood and oak trees that do exist along the waterside berm are host to a large number of birds and other wildlife and provide popular spots for wildlife viewing. Removal of a large number of these trees to ensure compliance with USACE vegetation policy would substantially reduce the quality of existing wildlife viewing activities in the area, and would therefore be considered significant. This effect could occur under any of the proposed flood program alternatives along the DWSC East Levee, which are adjacent levee raise, full levee raise, in-place levee raise, relief wells, rock slope protection, sheet pile wall, slope flattening, and slurry cutoff wall.

Effect REC-3 Finding—DWSC East Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

Yolo Bypass Levee

The Yolo Bypass Levee is, in general, already maintained in a manner close to the new USACE standard for vegetation on levees, and full compliance with the policy would not require the removal of a substantial amount of woody vegetation. However, a stability berm is proposed as a flood protection alternative along this levee stretch, which would require the levee footprint to be expanded and therefore extend the zone that must be maintained free of woody vegetation. This could result in the removal of large areas of existing riparian forest, substantially reducing the quality of existing recreation activities in the area, and is therefore considered significant. No feasible mitigation is available to reduce this effect to a lesser level.

Effect REC-3 Finding—Yolo Bypass Levee	With Mitigation
Significant	Significant and unavoidable—no feasible mitigation

Sacramento Bypass Levee

The Sacramento Bypass Levee is, in general, already maintained to the new USACE standard for vegetation on levees, and full compliance with the policy would not require the removal of much additional woody vegetation. However, three flood protection alternatives (slope flattening, seepage berm, and stability berm) are proposed for the Sacramento Bypass Levee that would require the

levee footprint to be expanded landward and therefore extend the zone that must be maintained free of woody vegetation. This may require removal of some mature trees from the CHP Academy EIP project area. However, because the trees are part of an already marginal view of CHP Academy facilities and are currently inaccessible to visitors due to fencing, and because the Sacramento Bypass Levee is not known as a wildlife viewing spot, this effect would be less than significant. No mitigation is required.

Effect REC-3 Finding—Sacramento Bypass Levee	With Mitigation
Less than significant	N/A

Effect REC-4: Permanent Loss of Recreation Facilities or Opportunities

Some flood program alternatives could require full or partial removal of formal recreation facilities along the Sacramento River North, Sacramento River South, and Port South reaches. This could occur if the levee footprint is expanded into an existing park or facility, or if a facility on the levee would be permanently affected by the flood alternative. This effect is discussed as it relates to each reach in the Affected Reaches section below.

Program Alternatives Associated with This Effect

Implementation of the following flood program alternatives could cause Effect REC-4:

Program	Alternative	
Flood	▪ Flood wall	▪ Relief wells
	▪ Levee raise (in place)	▪ Slope flattening
	▪ Levee raise (adjacent)	▪ Stability berm
	▪ Levee raise (full)	▪ Setback levee

Affected Reaches

Sacramento River North Levee

An adjacent levee raise, full levee raise, or slope flattening on the Sacramento River North Levee would require the levee footprint to be expanded landward. Bryte Park, a West Sacramento community park, sits right at the landside toe of the existing levee. Expansion of the levee footprint could intrude into the park, possibly requiring the removal of a portion of the running track and soccer field. WSAFCA has committed to rebuilding all formal park facilities removed during construction activities (see the environmental commitment to rebuild affected formal park facilities described in Section 2.9, Chapter 2, and Alternatives). With implementation of this environmental commitment, the running track and soccer field would be rebuilt after construction of levee alternatives, and there would be no permanent loss of recreation opportunities. This effect would be less than significant. No mitigation is required.

Effect REC-4 Finding—Sacramento River North Levee	With Mitigation
Less than significant	N/A

Sacramento River South Levee

An adjacent levee raise, full levee raise, or slope flattening on the Sacramento River South Levee would require the levee footprint to be expanded landward, and relief wells would require small areas on the landside of the levee to be allotted to the wells. This could permanently encroach upon two informal recreation areas: the Honda Hills and the Bees Lakes area, both described above. The Honda Hills area is used by riders of off-highway vehicles, equestrians, and pedestrians and the Bees Lakes area is used by wildlife viewers and paintball enthusiasts.

Because these areas are not formal recreation facilities, and because any land permanently removed to accommodate an enlarged levee footprint or relief wells would be a small fraction of the Honda Hills' 640-acre total area and the Bees Lakes 23-acre total area, permanent effects would be less than significant. No mitigation is required.

Effect REC-4 Finding—Sacramento River South Levee	With Mitigation
Less than significant	N/A

Setback Levee on the Sacramento River South Levee

A setback levee in the Sacramento River South Levee stretch would require construction of an entirely new levee embankment some distance landward of the existing levee. Depending on placement of the setback levee, this may affect the Honda Hills and Bees Lakes areas, which are used for informal recreational purposes as described above.

Construction of a setback levee would occur west of the Bees Lakes. This may lead to occasional inundation of the area during high flow events in the Sacramento River, but the area would remain intact and long-term effects on recreation opportunities in the area would be minimal.

Construction of a setback levee could permanently affect the Honda Hills area, causing a portion of the land to be lost to the new levee footprint. However, because the current recreational use of the area is unauthorized, and because a formal off-highway vehicle park exists within the region (Prairie City State Vehicular Recreation Area), this effect is considered less than significant.

As described in Chapter 2, Alternatives, the City of West Sacramento plans to convert the Honda Hills area to a formal recreation area (Stone Lock District). Construction of all or a portion of this recreation area is addressed as a potential part of the program. Plans for the park would need to be modified to accommodate the setback levee if one were to be constructed. Although the plans for the Stone Lock District may need to be modified, this effect is considered less than significant, as the new setback levee and waterside areas could be compatibly incorporated into the design of the park. No mitigation is required.

Effect REC-4 Finding—Setback Levee, Sacramento River South Levee	With Mitigation
Less than significant	N/A

Stability Berm on the Sacramento River South Levee

Construction of a stability berm along the Sacramento River South Levee would require the levee footprint to be expanded landward. The Honda Hills and Bees Lakes areas sit right at the toe of the existing levee, as described above in the Setting section. These areas are used for informal

recreational pursuits. Depending on the width of the berm necessary to meet the structural needs of the levee, some of the land currently used for recreational pursuits in these areas could be lost to the berm's footprint. Although the Honda Hills and Bees Lakes areas offer unique opportunities within the City for off-highway vehicle use, wildlife viewing, and paintball enthusiasts, they are not formally recognized recreation areas and recreational use of these areas is not authorized. Loss of these areas to non-recreational use would therefore be less than significant. No mitigation is required.

As described in Chapter 2, Alternatives, the City plans to convert the Honda Hills area to a formal recreation area (Stone Lock District), and the Bees Lakes area to an official recreation area. Construction of all or a portion of these parks are addressed programmatically. Plans for the parks would need to be modified to accommodate the stability berm if one were to be constructed. Although the plans for the Stone Lock District and the Bees Lakes area may need to be modified, this effect would be less than significant, as the new stability berm could be compatibly incorporated into the design of the parks. No mitigation is required.

Effect REC-4 Finding—Stability Berm, Sacramento River South Levee	With Mitigation
Less than significant	N/A

Port South Levee

An adjacent levee raise, full levee raise, in-place levee raise, or slope flattening on the Port South Levee would require all features on the levee crown to be removed. In the case of an adjacent levee raise, full levee raise, or slope flattening, all features on the landside of the levee would also need to be removed to accommodate the landward expansion of the levee footprint. This could have permanent effects on two recreation areas: the Barge Canal Recreational Access, which is located on top and on the waterside of the levee, and the informal recreation area known as the Honda Hills, both described above.

Because the Honda Hills area is not a formal recreation facility, and because any land permanently removed to accommodate an enlarged levee footprint would be a small fraction of the Honda Hills' 640-acre total area, permanent effects on the Honda Hills would be less than significant. See the above discussion of effects related to construction of a stability berm on the Sacramento River South Levee for an exploration of effects of levee expansion on park planning efforts.

The Barge Canal Recreational Access is a formal, City of West Sacramento facility. It is a narrow, linear park, located exclusively on a 0.25-mile swath of the Port South Levee just west of Jefferson Boulevard. Levee raising or slope flattening in this area likely would require the removal of all infrastructure related to this facility to accommodate construction activities. Because the Barge Canal Recreational Access is a popular, City-sanctioned fishing spot, and because the boat ramp there provides the only public boat access to the barge canal or DWSC, the loss of this facility would significantly affect recreation opportunities in the community. However, WSAFCA has committed to rebuilding all formal park facilities removed during construction activities (see the environmental commitment to rebuild affected formal park facilities described in Section 2.9 of Chapter 2, Alternatives). With implementation of this environmental commitment, the Barge Canal Recreational Access would be rebuilt after construction of levee alternatives and there would be no permanent loss of recreation opportunities. This effect would be less than significant. No mitigation is required.

Effect REC-4 Finding—Port South Levee	With Mitigation
Less than significant	N/A

Flood Wall on the Port South Levee

A flood wall is proposed as one of the flood program alternatives on the Port South Levee. Permanent presence of a flood wall would restrict recreation activities along the Port South Levee, most significantly fishing and boating. A flood wall would permanently block access to the boat ramp located at the Barge Canal Recreational Access, and, depending upon the height of the wall and potential disabilities of visitors, could prevent anglers from accessing the banks of the barge canal. Because the Barge Canal Recreational Access is a popular, City-sanctioned fishing spot, and because the boat ramp there provides the only public boat access to the barge canal or DWSC, this permanent effect is considered significant. Implementation of Mitigation Measure REC-MM-2 would reduce this effect to a less-than-significant level.

Effect REC-4 Finding—Flood Wall, Port South Levee	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure REC-MM-2: Preserve Access to Barge Canal Recreation Access

WSAFCA will ensure that formal recreational access to the barge canal is permanently preserved. For example, this could be achieved by using closures instead of a floodwall at the Barge Canal Recreational Access. The closures would only need to be in place on the levee when the city is threatened by high water. At other times of the year, the closures would be removed and stored nearby to allow for full recreation access to the waterfront.

Yolo Bypass Levee

Construction of a stability berm on the Yolo Bypass Levee would require the levee footprint to be expanded landward. The Roland Hensley Bike Park, a City of West Sacramento mini park, sits right at the landside toe of the existing levee, north of I-80. This park serves as a staging area for riders on the Yolo Causeway Bicycle Path, and provides a connection between the path and West Capitol Avenue. Riders can access West Capitol Avenue through the Roland Hensley Bike Park parking lot, or via a connector path that parallels the toe of the levee for approximately 1,200 feet. A stability berm in that area would extend the levee footprint into the park and connector path. Depending on the width of the berm, the park and connector path may need to be completely removed.

The Yolo Causeway Bicycle Path is a heavily used regional recreation and commuter corridor, and the only access to this corridor is through Roland Hensley Bike Park. Removal of the park would significantly affect regional recreation opportunities, as it would eliminate access to and from the Yolo Causeway Bicycle Path. However, WSAFCA has committed to rebuilding all formal park facilities removed during construction activities (see the environmental commitment to rebuild affected formal park facilities described in Section 2.9 of Chapter 2, Alternatives). With implementation of this environmental commitment, WSAFCA will ensure that a safe bicycle route connecting the Yolo Causeway Bicycle Path to West Capitol Avenue, along with replacement of existing bike park amenities are constructed after levee alternatives are complete, ensuring that

there is no significant permanent loss of recreation opportunities. This effect would be less than significant. No mitigation is required. Temporary effects on the Yolo Causeway Bicycle Path are discussed above under Effect REC-1.

Effect REC-4 Finding—Yolo Bypass Levee	With Mitigation
Less than significant	N/A

Effect REC-5: Temporary Disruption of Recreational Boating Activities during Construction

Placement of rock slope protection may require in-channel construction activities that could temporarily disrupt recreational boating and personal watercraft use. If the bank protection design incorporates a rock bench, in-channel construction activities are likely to occur. Rock slope protection is proposed as a flood program alternative along the Sacramento River North and Sacramento River South, DWSC West, and DWSC East Levees. This effect is discussed as it relates to each reach in the Affected Reaches section below.

Program Alternatives Associated with This Effect

Construction of rock slope protection could cause Effect REC-5.

Program	Alternative
Flood	▪ Rock slope protection

Affected Reaches

Sacramento River North and Sacramento River South Levees

As described in the Setting section above, the Sacramento River is a popular year-round recreation boating corridor. Temporary disruption of recreational boating would result from the presence of construction vehicles, equipment, and personnel in and adjacent to the Sacramento River, as well as temporary construction effects on channel water quality (i.e., increased turbidity from suspended materials).

The disruption of recreational boating in the area would be temporary and WSAFCA would implement the environmental commitment to reduce construction-related effects on navigation (as described in Section 2.9, Chapter 2, and Alternatives). This environmental commitment includes measures to ensure that:

- construction will not occur during major summer holiday periods; and
- warning signs and buoys will be posted at, upstream of, and downstream of all construction equipment, sites, and activities.

Therefore, this effect would be less than significant. No mitigation is required.

Effect REC-5 Finding— Sacramento River North and Sacramento River South Levees	With Mitigation
Less than significant	N/A

DWSC West and DWSC East Levees

As described in the Setting section above, the calm waters of the DWSC provide a unique recreation opportunity for non-motorized boaters, regional rowing clubs, and local sailing and outboard motor clubs. Temporary disruption of recreational boating would result from the presence of construction vehicles, equipment, and personnel in and adjacent to the DWSC, as well as temporary construction effects on channel water quality (i.e., increased turbidity from suspended materials).

The disruption of recreational boating in the area would be temporary and WSAFCA would implement the environmental commitment to reduce construction-related effects on navigation (described in Section 2.9, Chapter 2, Alternatives). Therefore, this effect would be less than significant. No mitigation is required.

Effect REC-5 Finding—DWSC West and DWSC East Levees	With Mitigation
Less than significant	N/A

Effect REC-6: Long-Term Increase in Recreation Opportunities

A number of new recreation facilities are proposed for construction in the study area. As described in Chapter 2, Alternatives, these include trails, riverside parks, developed water access, and special projects. These new facilities would constitute a substantial increase in recreation opportunities for the City of West Sacramento, and would advance the policies of the following planning documents:

- *City of West Sacramento General Plan*
- *City of West Sacramento Parks Master Plan*
- *Sacramento Riverfront Master Plan*
- *Southport Design Guidelines*
- *Triangle Specific Plan*
- *Washington Specific Plan*
- *West Sacramento Bicycle and Pedestrian Path Master Plan*
- *Yolo County General Plan*

Program Alternatives Associated with This Effect

Implementation of any of the recreation program alternatives would cause Effect REC-6:

Program	Alternative	
Recreation	▪ Trails	▪ Developed water access
	▪ Riverside parks	▪ Special projects

Affected Reaches

Recreation alternatives are proposed along the entire levee reaches except for the DWSC West Levee. Effects specific to each reach are described below. This effect is considered beneficial for all reaches.

Sacramento River North Levee

A number of new recreation facilities are proposed for construction along the Sacramento River North Levee under the program. These include, among other improvements, docks and fishing piers, formal park facilities, habitat zones, a continuous recreation trail, a public plaza, an extension of the Riverwalk Promenade, and improvements to Bryte Park. These new park facilities would constitute a substantial increase in recreation opportunities for the city, and would advance the policies of the planning documents listed above. This effect is considered beneficial.

Sacramento River South Levee

The recreation alternatives proposed along the Sacramento River South Levee include recreation facilities at the Stone Lock District, Southport Community Park/River Park, and a recreation corridor running the length of the levee reach. The construction of active and passive recreation facilities at the Stone Lock District would convert the waterfront area from an informally used fishing, walking, and equestrian area to a more formal park-like setting. Eventual recreation facilities may also include a rowing and boating center, a marina, an amphitheater and festival venue, trails, and fishing piers. Formal park development and presence of park employees would increase the safety of the area. These new and upgraded recreation facilities would constitute a substantial increase in recreation opportunities for the city, and would advance the policies of the planning documents listed above. This effect is considered beneficial.

Port North Levee

Two new recreation facilities are proposed for construction along the Port North Levee under the program. As described in Chapter 2, Alternatives, these are active and passive recreational facilities at the Stone Lock District and a recreation corridor between the Sacramento River and Lake Washington Boulevard. These new recreation facilities would constitute a significant increase in recreation opportunities for the city, and would open up a large area for public access that is currently in private ownership. Construction of these facilities would also advance the policies of the planning documents listed above. This effect is considered beneficial.

Port South Levee

A number of new recreation facilities are proposed for construction along the Port South Levee under the program. These include a recreation corridor along the levee running from the Sacramento River to Lake Washington Boulevard, the Stone Lock District, and upgrades to the Barge Canal Recreational Access. The construction of passive and active recreational facilities at the Stone Lock District would convert the waterfront area from an informally used fishing, walking, and equestrian area to a more formal park-like setting. Eventual recreation facilities may include a rowing and boating center, a marina, an amphitheater and festival venue, trails, and fishing piers. Formal planning and presence of park employees would increase the safety of the area. These new and upgraded recreation facilities would constitute a significant increase in recreation opportunities for the City of West Sacramento, and would advance the policies of the planning documents listed above. This effect is considered beneficial.

South Cross Levee

A paved pedestrian and bicycle trail connecting the Sacramento River South Levee to the DWSC East Levee is proposed for construction atop the South Cross Levee under the program. This segment is part of the larger Recreational Corridor 5 trail proposed in the Parks Master Plan, which, when

combined with Recreational Corridors 1 and 4, would provide a continuous bike/pedestrian loop around the entire Southport area. Acquisition of a public right-of-way and construction of this levee-top trail would significantly improve recreation corridor connectivity, as the South Cross Levee is currently closed to public access. It would also advance the policies of the planning documents listed above. This effect is considered beneficial.

DWSC East Levee

Although the DWSC East Levee is currently used as a bike and pedestrian trail, it is private property and public access is technically considered trespassing. An official public right-of-way featuring a pedestrian and bicycle trail with water access trails and landings where appropriate is proposed for acquisition and construction atop the DWSC East Levee as part of the program. This segment is part of the larger Recreational Corridor 5 trail proposed in the Parks Master Plan, which, when combined with Recreational Corridors 1 and 4, would provide a continuous bike/pedestrian loop around the entire Southport area. Acquisition of a public right-of-way and construction of this segment of Recreational Corridor 5 would significantly improve recreation corridor connectivity and expand officially sanctioned recreation opportunities in the Southport area. It would also advance the policies of the planning documents listed above. This effect is considered beneficial.

Yolo Bypass Levee and Sacramento Bypass Levee

A paved pedestrian and bicycle trail is proposed for acquisition and construction atop the Yolo Bypass and Sacramento Bypass Levees as part of the program. Although this segment is not part of the larger recreational corridor system proposed in the Parks Master Plan, this area is currently underutilized and construction of a trail in this area would improve recreation corridor connectivity and expand recreation opportunities in West Sacramento. It would also advance the policies of some of the planning documents listed above. This effect is considered beneficial.

Effect REC-6 Finding	With Mitigation
Beneficial	N/A

Section 3.16
Utilities and Public Services

3.16.1 Introduction

This section describes the regulatory and environmental setting for utilities and public services, the effects on utilities and public services that would result from the program, and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed and briefly described below.

- City of West Sacramento website (www.cityofwestsacramento.org)
- Yolo County website (ww.yolocounty.org)
- Communications with Yolo County Planning Department

3.16.2 Affected Environment

3.16.2.1 Regulatory Setting

3.16.2.1.1 State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. CPUC is responsible for ensuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy. CPUC establishes service standards and safety rules and authorizes utility rate changes. CPUC enforces CEQA compliance for utility construction. CPUC also regulates the relocation of power lines by public utilities under its jurisdiction, such as The Pacific Gas and Electric Company (PG&E). CPUC works with other state and Federal agencies in promoting water quality, environmental protection, and safety.

California Integrated Waste Management Act

In 1989, Assembly Bill 939 (AB 939), known as the Integrated Waste Management Act, was passed into law. Enactment of AB 939 established the California Integrated Waste Management Board and set forth aggressive solid waste diversion requirements. Under AB 939, every city and county in California is required to reduce the volume of waste sent to landfills by 50% through recycling, reuse, composting, and other means. AB 939 requires counties to prepare a Countywide Integrated Waste Management Plan (CIWMP). An adequate CIWMP contains a summary plan that includes goals and objectives, a summary of waste management issues and problems identified in the incorporated and unincorporated areas of the county, a summary of waste management programs

and infrastructure, existing and proposed solid waste facilities, and an overview of specific steps that would be taken to achieve the goals outlined in the components of the CIWMP.

3.16.2.1.2 Local

City of West Sacramento

City of West Sacramento General Plan

The *City of West Sacramento General Plan Policy Document* defines the policies and objectives governing City responsibilities for public utilities and services.

Stormwater Drainage

City of West Sacramento General Plan Section IV, Goal C (City of West Sacramento 2004a) states that the City will maintain an adequate level of service in the storm drainage system to accommodate runoff from existing and future development and to prevent property damage from flooding. The policies to accomplish this goal are listed below.

1. Where practical and economical, the City shall upgrade existing drainage facilities as necessary to correct localized flooding problems.
2. The City shall continue to expand and develop storm drainage facilities to accommodate the needs of existing and planned development.
3. The City shall, through a combination of drainage improvement fees and other funding mechanisms, ensure that new development pays its fair share of the costs of drainage system improvements.
4. The City shall cooperate with other responsible agencies in ensuring that levees surrounding the city are maintained and improved to provide a minimum 200-year flood protection.

Water

The City provides water to its constituents in accordance with the *City of West Sacramento General Plan*, Section IV, Goal A. (City of West Sacramento 2004a) This goal states the City will maintain an adequate level of service in the water system to meet the needs of existing and future development. The policies associated with this statute follow.

1. The City shall continue to use treated surface water from the Sacramento River as the principal source of domestic water for the city, relying on treated groundwater only to supply the port pressure zone and as an emergency backup to the surface water source. The City shall pursue as expeditiously as possible, acquisition of additional surface water rights necessary to accommodate water demand.
2. The City shall continue to expand and develop water treatment, distribution, and storage facilities to accommodate the needs of existing and planned development.
3. To minimize the need for the development of new water sources and facilities and to minimize sewer flows, the City shall promote water conservation both in City operations and in private development.
4. The City shall replace or repair old, leaking water lines as financially feasible.

5. The City shall ensure the provision of adequate fire-flow rates in all new development.
6. The City shall maintain fire hydrants.
7. The City shall, through a combination of water development fees and other funding mechanisms, ensure that new development pays its fair share of the costs of water system improvements.

The Bryte Bend Treatment Plant is responsible for treatment of City's water and for reporting standards and findings regarding the City's drinking water to the California State Department of Health Services, Drinking Water Program. The Bryte Bend Water Treatment Plant Laboratory:

- monitors drinking water quality to ensure it is of a consistently high quality,
- provides laboratory services necessary to support the operating and monitoring requirements for the water treatment plant,
- responds to consumer water quality concerns,
- monitors water quality of the distribution system and watershed, and
- provides services to environmental programs.

Wastewater

The City of West Sacramento manages the wastewater according to the *City of West Sacramento General Plan*, Section IV, Goal B. The City states it will maintain an adequate level of service in the City's sewage collection and disposal system to meet the needs of existing and future development.

Solid Waste

Solid waste disposal is provided by Yolo County and governed by the *City of West Sacramento General Plan*, Section IV, Goal D in close consultation with Yolo County Department of Public Works. This plan defines the programs for recycling and reuse, resource recovery, and disposal. The City commits to provide for the collection and disposal of solid waste while minimizing the generation of waste (City of West Sacramento 2004a).

Public Services

The placement of public services in the City is authorized by the City of West Sacramento Planning Department in accordance the goals and policies established in the *City of West Sacramento General Plan*, Section IV. The City of West Sacramento Public Works Department is responsible for operating and maintaining city roads, which serve as emergency vehicle routes.

Solano County

Solano County General Plan

The *Solano County General Plan* contains the following goals and policies that regulate public services and utilities, as they relate to the program, within Solano County:

PF.G-1: Provide adequate public services and facilities to accommodate the level of development planned by the County.

PF.G-2: Ensure that residents throughout Solano County have access to essential public facilities and services.

PF.G-3: Provide effective and responsive fire and police protection, and emergency response service.

PF.P-4: Ensure that adequate land is set aside within the unincorporated county for public facilities to support future needs.

PF.P-38: Ensure accessible and cost-effective fire and emergency medical service throughout the county. Facilitate coordination among city and county fire agencies and districts to improve response times, increase services levels, provide additional training, and obtain essential equipment.

PF.P-39: Identify and require incorporation of fire protection and emergency response measures in the review and approval of new projects.

Stormwater and Drainage

These floodplain zones are defined by FEMA. Staff in the Department of Resource Management will evaluate projects in dam inundation areas on a case-by-case basis using the current data available to them.

- HS.P-1 through HS.P-11

Wastewater

Solano County in the jurisdiction of two RWQCBs: the San Francisco Bay RWQCB in the western county and the Central Valley RWQCB in the east. The State Water Board was created in 1967 to allocate water resources and to protect water quality. The mission of the RWQCBs is to develop and enforce water quality objectives and implementation plans to best protect the state's waters, recognizing local differences in climate, topography, geology, and hydrology.

- Policies PF.P-21through PF.P-22

Solid Waste

The CIWMP for Solano County was developed in response to Assembly Bill 75 (AB 75), which required each state agency and large state facility to develop such a plan. This legislation requires each county to report annually on the implementation of its CIWMP.

- Policies PF.P-23 through PF.P-31

Public Services

CPUC regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. The Federal Energy Regulatory Commission is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil.

- PF.P-49 through PF.P-52

3.16.2.2 Environmental Setting

This section discusses the existing conditions related to utilities and public services in the study area.

3.16.2.2.1 Utilities and Service Systems

HDR, Inc. performed a preliminary assessment and review of known aboveground and underground utilities in the study area (Appendix D). The assessment was completed by obtaining encroachment permits from the State of California Central Valley Flood Protection Board (CVFPB) that describe underground and aboveground utilities which occur within, on top of, or above the current levee footprint. Overhead utilities (power lines and telephone lines) and underground utilities (telephone and fiber optic conduits, communication cables, and pipelines) occur in the study area. The listed utilities may not be in compliance with the CVFPB and USACE utility placement standards within levees. Please see Appendix D for a table listing known utilities in the study area.

Electric Power Transmission

Electricity for the study area is provided by PG&E. Power transmission facilities have developed parallel to population growth in various communities within the study area. Many power-generating facilities are found in the study area.

Natural Gas

Natural gas pipelines exist throughout the study area. These pipelines are owned and operated by PG&E. These pipelines are usually 6- to-8-inch high-pressure gas lines that provide natural gas to the residences and businesses in the study area. Propane is delivered by tanker trucks to users as necessary and is stored in individual propane tanks.

Communications

SBC Communications Inc., Pacific Bell, MCI, Electric Lightwave, and XO Communications provide communication services in the study area. SBC Communications provides its services through underground fiber trunk lines and overhead lines attached to poles. The communication lines typically are aligned parallel to roadways and then traverse the roadways to supply individual service units.

A network of various telephone companies, cellular communication companies, and cable companies also service the study area. New service to specific sites is accomplished on a case-by-case basis.

Water

The city's main water source is the Sacramento River. The intake structure is located at Bryte Bend, upstream of the confluence of the Sacramento and American Rivers. Water withdrawn from the Sacramento River is treated at the Bryte Bend Water Treatment Plant, which is operated 24 hours a day by state- certified water treatment plant operators.

Stormwater and Drainage

Stormwater drainage networks consist of both natural and human-made conveyance systems to collect, convey, and store runoff resulting from a storm event. The City manages the stormwater drainage system in the urban areas and in some rural areas.

Impervious surfaces in the study area are limited to roads, other small sections of pavement, urban residential and business structures, and rural residential and agricultural structures. Stormwater in

the agricultural portions of the study area are drained primarily by overland flow into human-made ditches, natural drainage swales, and watercourses that discharge into waterways.

Wastewater

Wastewater treatment in the study area is handled by the City of West Sacramento Wastewater Treatment Plant, built in 1948 and expanded in 1977 and 1988. A major improvement program took place during the early 1990s. The plant uses a secondary treatment activated sludge process with an anoxic selector. The average daily flow is 5.5 million gallons per day.

Solid Waste

Solid waste disposal is provided and governed by the *City of West Sacramento General Plan* in close consultation with Yolo County Department of Public Works. This plan defines the programs for recycling and reuse, resource recovery, and disposal. Solid waste currently is disposed of at the Yolo County Central Landfill located in the city of Davis. For 2009, the remaining capacity is 37,108,000 cubic yards.

3.16.2.2.2 Public Services

Fire Protection

The City's Fire Department has the mission of protecting life, environment, and property within the city of West Sacramento. To effectively complete this mission, the Fire Department has five fire stations throughout the city, each of which houses one front line fire engine equipped to handle a variety of emergency calls. The five fire stations operate 24 hours a day, 7 days a week, with a combined staffing of 19 personnel on duty. Firefighters work 24-hour tours of duty. The Fire Department is divided into three major units: Emergency Services, Fire Prevention/Hazardous Materials, and Administration.

Police Protection

According to the City's web site, the West Sacramento Police Department is committed to providing quality service to the community and its guests through maintaining order, fostering a sense of security, enforcing the laws of the city and state, and supporting the Constitutions of the United States and the State of California.

The Police Department provides a full range of police services to the residents of West Sacramento 24 hours a day, 7 days a week. The department is responsible for patrolling city neighborhoods, responding to calls for service, investigating crime and arresting offenders, and working closely with the community to identify and solve problems of crime and neighborhood disorder. They also provide educational programs to assist citizens with making their communities safe and enjoyable places to live.

The Police Department is organized into three offices: Administration, Investigations (which includes the Code Enforcement Division), and Operations. West Sacramento police officers service a population of 47,782 (California Department of Finance 2009) and patrol 23.3 square miles.

The Police Department is staffed with 75 sworn officers and 39 civilian full-time employees. Other positions include part-time police officers, parking enforcement officers, reserve police officers, and volunteers.

Emergency Medical Services

No hospitals are located within the city of West Sacramento. The nearest hospital is Sutter General Hospital, which is 3.7 miles from West Sacramento at 29th Street in Sacramento.

3.16.3 Environmental Consequences

This section describes the utilities and public services effects associated with the program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.16.3.1 Assessment Methods

Effects on utilities and public services were evaluated based on the duration and extent to which such services would be affected as well as the ability of a service provider to continue to provide a level of service that could meet the needs of an affected community. The evaluation assumed modifications to levees would occur in phases and when floods were unlikely.

The following process was followed to determine whether effects on utilities and public services would be considered significant:

- review of relevant documents and websites to obtain information regarding known public services and utilities in the study area,
- analysis of geographic map research to determine locations of existing utilities and public services for program components, and
- telephone calls and e-mail correspondence to area utility/service providers.

3.16.3.2 Determination of Effects

Significance criteria for identifying program effects on utilities and public services are based on Appendix G of the State CEQA Guidelines. Utilities and public services effects are based on the displacement or modification of facilities and services because of either water-related facility development or economic stimulation. Utility and public service effects are considered if implementation of the program would:

- require the construction or expansion of electrical or natural gas transmission or distribution facilities;
- require the construction or expansion of a water conveyance or wastewater treatment facility or require new or expanded water supply entitlements;
- require the construction of new or expanded stormwater drainage facilities;
- require the construction or expansion of wastewater treatment facilities;
- cause the capacity of a solid waste landfill to be reached sooner than it would without the program;
- require the construction or expansion of communications facilities (telephone, cell, cable, satellite dish);

- significantly affect public utility facilities that are located underground or aboveground along the local roadways from program construction activities;
- create an increased need for new fire protection, police protection, or ambulance services or significantly affect existing emergency response times or facilities; or
- intersect with major infrastructure components, such as bridges or overpasses, requiring relocation of the components.

3.16.3.2.1 Effects Assumptions

The following assumptions are made as part of the analysis of effects on Utilities and Public Services:

- Implementation of the proposed program is not expected to create additional demand for electricity or natural gas and would not require the construction or expansion of electrical or natural gas transmission lines or public utilities.
- Implementation of the program would not require the construction or expansion of wastewater treatment facilities, nor would it require the relocation of major infrastructure.
- In addition to the effects listed below, Effect TN-4: Increase Emergency Response Times, discussed in Section 3.5, Transportation and Navigation, also applies to this resource.

3.16.3.3 Effects and Mitigation Measures

3.16.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue; however, no ground-disturbing activities related to construction or program maintenance would occur and no utilities or service systems would be interrupted or damaged.

Under the No Action Alternative, there would be a continued potential for levee failure that could cause inundation from high flows and destruction or damage to utility lines, natural gas supply lines, and water or wastewater piping or facilities, all of which could lead to widespread contamination, temporary power outages, and interruptions of other utilities in the study area and surrounding areas. Effects on the water supply system could be particularly severe, as a single break in a water delivery pipe or main could contaminate the entire city's water supply. All breaks and leaks would need to be repaired and the pipes in every building would need to be flushed to remove contamination before residents and businesses could rely on safe water. Depending on the severity and location of the flooding and contamination, this effort could take a significant amount of time.

Varying levels of damage could be done to public service structures as well, causing delays in fire protection, police protection or emergency medical assistance. A major flood event could also stress the region's emergency response and hospital services, as the likelihood of injury resulting from a flood event is high, and evacuees may not have access to their regular medications. However, the potential for such an occurrence is uncertain, and the magnitude and duration of any related risks cannot be predicted. Because the effects of a levee failure are unpredictable, a precise determination of significance is not possible and cannot be made.

3.16.3.3.2 Proposed Flood and Recreation Alternatives

Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service

Construction of program flood and recreation alternatives could necessitate the relocation of utility infrastructure, which could result in temporary loss of service. Existing infrastructure such as telephone lines, natural gas lines, fiber optic, cable and other utility lines could be underground or overhead at a project site.

Utility infrastructure could require significant actions to repair, relocate, or replace depending on specific construction activities occurring at each site. Additionally, program construction could necessitate that existing utilities be taken off line or could cause accidental damage to identified and unidentified infrastructure. Because the potential exists for damage and service interruptions to existing utilities both identified and unidentified, this potential construction effect would be considered significant. Mitigation Measure PUB-MM-1 would reduce these potential effects to a less-than-significant level.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PUB-1:

Program	Alternative	
Flood	▪ Levee raise (adjacent) ▪ Levee raise (in place) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation alternatives are proposed for the reaches, Effect PUB-1 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reaches.

Effect PUB-1 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training

The program proponent will ensure the following measures are implemented to avoid and minimize potential damage to utility and service disruptions during construction. Implementing these measures will help ensure existing utilities are not damaged and that service interruptions are minimized.

- Obtain utility excavation or encroachment permits as necessary before initiating any work with the potential to affect utility lines, and include all necessary permit terms in construction contract specifications.
- Before starting construction, coordinate with utility providers in the area to locate existing lines. Avoid the relocation of utilities when possible. Provide notification of potential interruptions in services to the appropriate agencies.
- Before starting construction, verify utility locations through field surveys and Underground Service Alerts. Clearly mark any buried utility lines in the area of construction before any earthmoving activity.
- Before starting construction, prepare a response plan to address potential accidental damage to a utility line. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities to ensure the safety of the public and the workers. Contractors will conduct worker training to respond to these situations.
- Stage utility relocations to minimize service interruptions.

Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction

Implementation of the proposed program may generate large quantities of levee material that would require disposal. A portion of the material could be disposed of on site and used for new levee construction, as long as it is suitable material. Disposal of the soil material would occur if site conditions do not allow for on-site disposal, soil characteristics make it infeasible for reuse as levee material, or the soil is determined to have contaminants that would require appropriate disposal. A conservative estimate for the amount of soil to be disposed of as part of the program implementation is 3 million to 5 million cubic yards. Soil disposed as part of the program would likely be transported to the Yolo County Central Landfill; however, the location of the landfill used for disposal of spoil material and other construction-related waste may be determined by the construction contractor at the time of construction activity based on capacity, type of waste, and other factors. Only those landfills determined to have the ability to accommodate the construction disposal needs of the individually proposed projects would be used.

As of fall 2009, the remaining capacity for the Yolo County Central Landfill is 37,108,000 cubic yards. Some of the disposed soils may be deemed suitable by the Yolo County Central Landfill for other beneficial uses. These soils would only be temporarily stored at the landfill and would not have an effect on its overcall capacity. The current landfill closure projection is in 2070, which takes into account disposal growth rate, including both beneficial and non-beneficial soil materials. Assuming all of the estimated 3 million to 5 million cubic yards of soil would require permanent disposal, program implementation would represent 8% of the remaining capacity of the Yolo County Central

Landfill. However, the option of on-site disposal or beneficial re-use is likely to reduce the cubic yards of soil that require permanent disposal. These facts combined with the fact that the landfill has sufficient capacity remaining throughout the projected life of the program (15 to 20 years), would make this effect less than significant. No mitigation is required. (Borrego pers. comm.)

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PUB-2:

Program	Alternative	
Flood	▪ Levee raise (adjacent) ▪ Levee raise (in place) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation alternatives are proposed for the reaches, Effect PUB-2 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reaches.

Effect PUB-2 Finding	With Mitigation
Less than significant	N/A

Effect PUB-3: Expansion of Stormwater Drainage Facilities

The operation of the proposed relief wells could result in new flows that may require expansion of stormwater drainage facilities or require the construction of new drainage facilities. However, in most cases, it is likely that the existing storm drain infrastructure has adequate capacity to carry the small amount of additional discharge from the relief well collection systems. During maximum flows, it is anticipated that the relief well system would generate approximately 70 gallons of water per minute. For most normal operations, the flow would be much less than 70 gallons per minute. If required at all, any expansion of drainage facilities would be limited to the specific area where relief wells are constructed and would not be substantial. Therefore, this effect is less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PUB-3:

Program	Alternative	
Flood	▪ Relief wells	▪ Slurry cutoff wall

Affected Reaches

Although different flood and recreation alternatives are proposed for the reaches, Effect PUB-3 could occur in the program reaches where relief wells are proposed: Sacramento River South, Port South, and DWSC East Levee reaches.

Effect PUB-3 Finding	With Mitigation
Less than significant	N/A

Section 3.17

Public Health and Environmental Hazards

3.17.1 Introduction

This section describes the regulatory and environmental setting for public health and environmental hazards, including hazardous materials, emergency response and evacuation plans, the potential for wildland fires, and health hazards to the public in the city of West Sacramento. The effects on public health and environmental hazards that would result from the program are described, as well as mitigation measures that would reduce significant effects.

The key sources of data and information used in the preparation of this section are listed below.

- *Draft 2030 Countywide General Plan* for Yolo County (Yolo County 2008)
- *West Sacramento General Plan Policy Document* (City of West Sacramento 1990)
- *Solano County General Plan* (Solano County 2008)

3.17.2 Affected Environment

3.17.2.1 Regulatory Setting

3.17.2.1.1 Federal

The principal Federal regulatory agency responsible for the safe use and handling of hazardous materials is the EPA. Two key Federal regulations pertaining to hazardous wastes are described below. Other applicable Federal regulations are contained primarily in CFR Titles 29, 40, and 49.

Resource Conservation and Recovery Act

The Federal Resource Conservation and Recovery Act enables EPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thus regulating the generation, transportation, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (also known as Superfund) was passed to facilitate the cleanup of the nation's toxic waste sites. In 1986, the act was amended by the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws). Title III states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the cleanup, even if the material was dumped illegally when the property was under different ownership.

3.17.2.1.2 State

California regulations are equal to or more stringent than Federal regulations. EPA has granted the State of California primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human and environmental health. Several key laws pertaining to hazardous wastes, emergency services, and mosquito abatement are discussed below.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused material that is part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to but more stringent than the Federal Resource Conservation and Recovery Act program. The act is implemented by regulations contained in Title 26 CCR, which describes the following elements required for the proper management of hazardous waste:

- identification and classification;
- generation and transportation;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities and staff training; and
- closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances and Control.

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by Federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. The office coordinates the responses of other agencies, including EPA, the California Highway Patrol, RWQCBs, air quality management districts, and county disaster response offices.

3.17.2.1.3 Local

Yolo County

The Health and Safety Element of the *Draft 2030 Countywide General Plan* for Yolo County (Yolo County 2008) contains goals, policies, and actions aimed at reducing the risk associated with natural and human-made hazards within the county. Any violation of these goals, policies, and actions would constitute a significant effect.

Goals

GOAL HS-2: Flood Hazards. Protect the public and reduce damage to property from flood hazards.

Policies

Policy HS-2.2: Ensure and enhance the maintenance and integrity of flood control levees.

Policy HS-2.3: Actively update and maintain policies and programs to ensure consistency with state and Federal requirements.

Actions

Action HS-A4: Require a minimum of 100-year flood protection for new construction, and strive to achieve 200-year flood protection for unincorporated communities where such levels of protection are not provided, require new development to adhere to the requirements of state law and the County Flood Damage Prevention Ordinance.

Action HS-A13: Require a minimum 50-foot setback for all permanent improvements from the toe of any flood control levee.

Action HS-A15: Support the efforts of levee maintenance districts with efforts to secure state and federal funding for geotechnical studies of levees and implementation of associated improvements.

Action HS-A16: Encourage flood hazard reduction projects along the Sacramento River to be consistent with the guidelines of the Sacramento River Corridor Floodway Management Plan.

Action HS-A17: Coordinate with local, state and federal agencies to define existing and potential flood problem areas, including the possible effects associated with global climate change, and to maintain and improve levees and other flood control features.

Action HS-A18: Develop a detailed maintenance and funding plan for levees under County control, to ensure that levee safety is maintained.

Action HS-A19: Support and encourage responsible agencies to site new levees or major rehabilitation of levees at a distance from the river and from existing levees, where feasible. This would provide a degree of redundancy in the system, increase the land available for habitat and flood storage, reduce operation and maintenance costs, and help to ensure the integrity of the structures.

Action HS-A21: Ensure that the upgrade, expansion, or construction of any flood control levee demonstrates that it will not adversely divert flood water or increase flooding.

Action HS-A23: Improve the county's classification within the Federal Emergency Management Agency Community Rating System.

Action HS-A28: Pursuant to Section 8201 of the State Water Code, develop local plans for flood protection, including analysis of financing options to construct and maintain any needed improvements, to address how 100-year floodplain protection for each community may be provided. Those communities that are economically disadvantaged shall have priority in developing flood protection plans. The cities shall be consulted in development of the plans, which shall be consistent with the Central Valley Flood Protection Plan.

Solano County

The Public Health and Safety Chapter of the *Solano County General Plan* (Solano County 2008) contains goals, policies, and implementation programs aimed at reducing the risks associated with natural and human-made hazards within the County. Any violation of these goals, policies, and implementation programs would constitute a significant effect.

Goals

HS.G-1: Minimize the potential for loss of life and property resulting from natural or human-caused hazards.

HS.G-5: Recognize the multiple functions of the natural environment for safety, recreation, protection from climate changes, and economic uses.

Policies

HS.P-2: Restore and maintain the natural functions of riparian corridors and water channels throughout the county to reduce flooding, convey stormwater flows, and improve water quality.

HS.P-6: Work with federal, state, and local agencies to improve flood control and drainage throughout the county.

HS.P-8: Work with responsible parties to ensure dams, levees, and canals throughout the county are properly maintained and/or improved.

HS.P-10: Ensure that flood management policies that minimize loss of life and property also balance with environmental health considerations of the floodplain and therefore do not cause further erosion, sedimentation, or water quality problems in the floodplain area.

Implementation Programs

HS.I-5: Require periodic stream maintenance by private property owners, and undertake regular stream maintenance by the appropriate public agencies.

HS.I-6: Continue to make regular flood control and drainage improvements as recommended by local agency plans, the U.S. Army Corps of Engineers, and the California Reclamation Board. These actions are independent of and in addition to the development review process.

HS.I-7: During project review, require the use of stormwater management techniques in developed upstream watershed areas that protect low-lying areas from flooding. Incorporate appropriate measures into the development review process to mitigate flooding and prevent erosion in and around county ditches.

HS.I-10: During project review, encourage the use of landscaping practices and plants that will reduce demand on water, retain runoff, decrease flooding, and recharge groundwater.

HS.I-13: Work with the Solano County Water Agency to create a countywide comprehensive flood management plan.

HS.I-15: Work with the Solano County Water Agency (or successor agency) in preparing a hydrological analysis of uplands, identifying the different watersheds that drain into the county, establishing flood-related objectives and priorities on a study area basis, and translating those into a coordinated series of flood-preventive measures for each watershed.

City of West Sacramento General Plan

The Central Valley Flood Protection Plan requires 200-year flood protection by the year 2025. The time and effort required to fully evaluate approximately 50 miles of levees, develop recommended strategies for improvement, and implement those improvements prompted action without further delay. In addition, within its General Plan, the City adopted a goal of achieving 200-year flood protection. The Health and Safety Section of the *City of West Sacramento General Plan Policy Document* (City of West Sacramento 1990) contains goals and policies aimed at reducing the risks associated with natural and human-made hazards within the county. Any violation of these goals and policies would constitute a significant effect.

Goal A: To prevent loss of life, injury, and property damage due to geologic and seismic hazards.

Policy 1: The City shall require preparation of geotechnical reports and impose appropriate mitigation measures to ensure, within the limits of technical and economic feasibility, that new structures are able to withstand the effects of seismic activity, including liquefaction.

Policy 3: The City shall request that responsible agencies regularly inspect and repair area levees, as needed, to ensure structural integrity in the event of seismic activity.

Goal B: To prevent loss of life, injury, and property damage due to flooding.

Policy 8: The City shall cooperate with area reclamation districts and other responsible agencies in the maintenance and improvement of levees and drainage channels.

Policy 9: The City shall support state and federal legislation which provides funding for the construction of flood control improvements in urbanized areas.

Policy 10: the City shall discourage uses that promote the erosion or structural deterioration of levees.

Goal C: To prevent loss of life, injury, and property damage due to wildland, cropland, and structural fires, explosions and release of hazardous materials.

Goal D: To ensure that City emergency response procedures are adequate in the event of natural or man-made disasters.

West Sacramento Area Flood Control Agency

WSAFCA is proposing the program to improve the levees in Yolo and Solano Counties that protect the city of West Sacramento. WSAFCA is a Joint Powers Authority created in 1994 through a Joint Exercise of Powers Agreement by the City, RD 900, and RD 537. WSAFCA was established to coordinate the planning and construction of flood protection facilities and to finance the local share of flood control projects. WSAFCA is responsible for the operations and maintenance of the detention basins, pump stations, and levees that protect the city.

3.17.2.2 Environmental Setting

3.17.2.2.1 Hazardous Materials

Hazardous materials are chemicals and other substances defined as hazardous by Federal and state laws and regulations. In general, these materials are substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may have harmful effects on public health or the environment during their use or when released to the environment. Hazardous materials also include waste chemicals and spilled materials.

The program levee reaches are located in urban, suburban, and rural areas. Potential sources of hazardous materials and waste may exist in the urbanized as well as agricultural areas adjacent to the levees. Hazardous materials may be present in the program area in a variety of common contexts, including:

- pesticides, herbicides, and fertilizers;
- petroleum hydrocarbons;
- underground storage tanks;
- contaminated debris;
- lead;
- wastewater;
- pits or ponds;
- stormwater runoff structures; and
- transformers that may contain polychlorinated biphenyls (PCBs).

Two sites in the study area, both along the Sacramento River North Levee, have known occurrences of hazardous materials. One of the sites is the petroleum groundwater plume located at the DWR Maintenance Yard and the Rivers site, which is described in more detail in Section 3.3, Water Quality and Groundwater Resources. Hazardous materials have been identified and recorded in an area called the Artist Colony, located on the waterside of the northern portion of the Sacramento River North Levee. The Artist Colony houses artist studios and industrial equipment. Future project sites would have Phase 1 evaluations performed prior to geotechnical site analysis to determine the presences of hazardous materials.

3.17.2.2.2 Wildland Fires

There are areas of undeveloped land in the city of West Sacramento and along the DWSC that may be more susceptible to wildland fire. These areas are composed of annual grasses that become dry during the summer month, which raises the risk of grassland fire. Levee reaches that comprise these fire-prone areas are the Sacramento River South, Port South, DWSC West, DWSC East, and South Cross Levees.

3.17.2.2.3 Emergency Response and Evacuation

Emergency response and evacuation services for the program area are provided by the various departments in the city of West Sacramento and cities nearest to the program area and through Yolo

County and Solano County Sheriff, Fire, and Emergency Services Departments. The city of West Sacramento, RD 537, and RD 900 have entered a joint flood operation agreement. The agreement has established procedures to protect the health, safety, welfare and property of the residents and landowners in the program area. Procedures described in the document consist of flood preparedness, information management, monitoring, flood fighting, and flood evacuation.

3.17.3 Environmental Consequences

This section describes the public health and environmental hazard effects associated with the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.17.3.1 Assessment Methods

The evaluation of potential effects on public health and environmental hazards addresses the potential for health and safety hazards during construction of the levee alternatives. The analysis includes evaluation of (1) the potential effects related to construction activities on workers, and (2) general safety of and hazards to both workers and the public posed by the construction and implementation of levee alternatives.

3.17.3.2 Determination of Effects

Criteria used for determining the significance of an effect on public health and environmental hazards are based on the environmental checklist included in Appendix G (14 CCR 15000 *et seq*.) of the State CEQA Guidelines as well as professional standards and practices. The proposed project was considered to cause a significant effect if it would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;
- emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- be located on a site that is on a list of hazardous materials sites compiled pursuant to California Government Code 65962.5, and as a result would create a significant hazard to the public or the environment;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- significantly affect drinking water quality.

3.17.3.3 Effects and Mitigation Measures

3.17.3.3.1 No Action Alternative

To recap from Chapter 2, Alternatives, the No Action Alternative is the continuation of the existing deficiencies along the nine levee reaches and absence of levee alternatives to increase the level of protection. Current levee operations and maintenance activities would continue. No potential construction-related effects would occur, such as accidental spill or discovery of hazardous materials related to this program.

However, without improvements to the West Sacramento levee system, the risk of levee failure would remain high. A levee failure in the city's levee system could result in flooding that could upset stored hazardous materials and spread agricultural pesticides, oil, gasoline, and other hazardous materials in flood waters, creating hazardous conditions for the public and the environment. Flood damage to homes and other structures can render them dangerous as a result of structural damage and contamination. Electrical systems could be damaged by flooding, posing the potential of fires, and natural gas leaks could result poisoning through inhalation of fumes, or could cause a sudden explosion if sparked. The likelihood of a significant amount of mold production is high after a flood event. Mold not only threatens the physical integrity of structures, but also poses its own health risks. Mold can cause lung infections, skin irritations, and other health dangers, especially for those with asthma, allergies, or suppressed immune systems. Additionally, the floodwaters themselves and ponds left behind could provide a wide breeding ground for mosquitoes, and the incidence of West Nile Virus and other diseases would likely increase.

Effects on the water supply system could be particularly severe in a flood event, as a single break in a water delivery pipe or main could contaminate the entire city's water supply. All breaks and leaks would need to be repaired and the pipes of every house would need to be flushed to remove contamination before residents and businesses could rely on safe water. Depending on the severity and location of the flooding and contamination, this effort could take a significant amount of time.

Varying levels of damage could be done to public service structures as well, causing delays in fire protection, police protection, or emergency medical assistance. A major flood event could also stress the region's emergency response and hospital services, as the likelihood of injury resulting from the flood event is high, and evacuees may not have access to their regular medications.

However, the potential for such an occurrence is uncertain, and the magnitude and duration of any related risks cannot be predicted. Because the effects of a levee failure are unpredictable, a precise determination of significance is not possible and cannot be made.

3.17.3.3.2 Flood and Recreation Program Alternatives

Effect PH-1: Incidental Release of Hazardous Materials during Construction

Program implementation would require the use of hazardous materials such as fuels and lubricants to operate construction equipment and vehicles such as excavators, compactors, haul trucks, and loaders. Bentonite (a non-hazardous material) would be transported to sites where slurry cutoff wall construction would occur. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction. However, fuels, and lubricants could be accidentally released into the environment at the construction site and along haul routes, causing environmental or human

exposure to these hazards. Risks to water quality (surface, ground, and drinking water) associated with incidental release of these materials are addressed in Section 3.3, Water Quality and Groundwater Resources.

As discussed in Section 3.3, the implementation of environmental commitments, including a SWPPP, a bentonite slurry spill contingency plan (BSSCP), an SPCCP, and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2, would ensure that the risk of accidental spills and releases into the environment would be minimal and that the effect on water quality would be less than significant.

In addition, WSAFCA would be required to comply with applicable Federal, state, and local laws, which would reduce the potential for accidental release of hazardous materials during their transport and use. Consequently, the risk of incidental release of hazardous materials during their transport and use in program construction activities is low and the effect is considered less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PH-1:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, Effect PH-1 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reaches.

Effect PH-1 Finding	With Mitigation
Less than significant	N/A

Effect PH-2: Exposure to Hazardous Materials Encountered at Project Sites

There is the potential that known or previously undocumented hazardous materials could be encountered at project sites. Excavation and construction activities at or near areas of currently unrecorded soil or groundwater contamination could result in the exposure of construction workers, the general public, and the environment to hazardous materials such as petroleum

hydrocarbons, pesticides, herbicides, fertilizers, contaminated debris, or elevated levels of other chemicals that could be hazardous. There are two known sites within the program area that contain hazardous materials: the Artist Colony and the petroleum groundwater plume at the DWR Maintenance Yard, described in the Environmental Setting. Construction activities in the vicinity of known or potentially unknown recognized environmental concerns could result in public health hazards.

In addition, program activities include the construction of setback levees, which may occur in areas that were previously used for agricultural purposes. The inclusion of these areas in the Sacramento River floodway could, during periodic flood events, result in the release of different types of contaminants that exist in the soil into river water, significantly affecting water quality. These contaminants include pesticides, fertilizers, organic litter, and debris containing hazardous substances. Exposure to these substances would result in a significant effect to public health and the environment.

Implementation of Mitigation Measures PH-MM-1, WQ-MM-1, and WQ-MM-2 described in Section 3.3, Water Quality and Groundwater Resources, and the implementation of environmental commitments of a SWPPP, a BSSCP, and SPCCP, as described in Section 2.9 of Chapter 2, Alternatives, would ensure that the effect on public health and the environment would be less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PH-2:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, Effect PH-1 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reaches.

Effect PH-2 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (if necessary) Environmental Site Assessment Investigations and Implement Required Measures

WSAFCA will conduct Phase I ESAs and, if necessary, Phase II ESAs or other appropriate testing. If necessary, the assessment will include an analysis of soil or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations before construction activities begin.

Recommendations in Phase I and Phase II ESAs to address any contamination that is found will be implemented before initiating ground-disturbing activities. In addition, WSAFCA will implement the following measures before ground-disturbing or demolition activities begin, in order to reduce health hazards associated with potential exposure to hazardous substances:

- Prepare a site plan that identifies any necessary remediation activities appropriate for proposed land uses, including excavation and removal of contaminated soils, and redistribution of clean fill material on the project site. The plan will include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site, as well as any other hazardous materials. In the event that contaminated groundwater is encountered during site excavation activities, the contractor will report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The contractor will be required to comply with the plan and applicable Federal, state, and local laws.
- Retain licensed contractors to remove all underground storage tanks.
- Notify the appropriate Federal, state, and local agencies if evidence of previously undiscovered soil or groundwater contamination is encountered during construction activities. Any contaminated areas will be cleaned up in accordance with the recommendations of Yolo County Environmental Health Division, Central Valley RWQCB, California Department of Toxic Substances Control, or other appropriate Federal, state or local regulatory agencies.,
- Prepare a worker health and safety plan before the start of construction activities that indentifies, at a minimum, all contaminants that could be encountered during construction activity; all appropriate worker, public health, and environmental protection equipment and procedures to be used during project activities; emergency response procedures; the most direct route to the nearest hospitals; and a Site Safety Officer. The plan will describe actions to be taken should hazardous materials be encountered on site, including protocols for handling hazardous materials and preventing their spread, and emergency procedures to be taken in the event of a spill.

Effect PH-3: Safety Hazards from the Construction Site and Vehicles

Under the proposed program, construction workers would operate vehicles and other mechanical equipment that, if used improperly, could result in safety hazards at the construction site. WSAFCA would ensure that all workers are properly trained to operate equipment. Safety precautions would

be followed at all times during construction to avoid accidents. WSAFCA also would require that all workers have a valid driver's license and insurance. These measures would ensure that this effect would be less than significant.

In addition, people may walk, ride bicycles, or otherwise use the levee during the construction period. The staging of the equipment when construction is not underway (i.e., weekends, holidays, and overnight) may pose a threat to public safety if the equipment is not properly secured. Proper signage and detours would be provided as stated in the environmental commitment to provide notification of construction area closure (described in Section 2.9, Chapter 2, Alternatives). These measures would reduce the risk to the public when construction is underway and when it is not. Therefore, this effect would be less than significant. No mitigation is required.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PH-3:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, Effect PH-3 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reach.

Effect PH-3 Finding	With Mitigation
Less than significant	N/A

Effect PH-4: Protection of People or Structures from Flood Hazards

All levees have the potential to fail, regardless of design. USACE has set forth guidelines for levee design. The levees along the Sacramento River, DWSC, Yolo Bypass, and the Port of Sacramento would be improved using methods that meet engineering requirements set forth by both USACE and the Reclamation Board. In addition, these levees would be improved to meet FEMA 200-year flood protection certification. This would be an improvement compared to the existing flood protection. Therefore, this effect would be beneficial.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PH-4:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, Effect PH-4 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass Levee reach.

Effect PH-4 Finding	With Mitigation
Beneficial	N/A

Effect PH-5: Hazardous Materials, Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School

There are a total of four schools located within 0.25 mile of the program area. These schools include Bryte Elementary School located at 637 Todhunter Avenue, Riverbank Elementary School located at 1100 Carrie Street, University of California Santa Barbara Children's Center located at 574 C Street, and Discovery Preschool located at 205 Stone Boulevard. Construction of the program would involve the use of potentially hazardous materials, such as fuels (gasoline and diesel), oils and Undocumented contaminated soil or water may be found during construction. The effect of exposure to incidentals release of these hazardous materials by school-aged children would be significant.

WSAFCA would be required to comply with applicable Federal, state, and local laws related to transport and use of hazardous materials. Consequently, the risk of incidental release of hazardous materials near existing or proposed schools during their transport and use during program construction activities would be low. These measures, along with the implementation of Mitigation Measures PH-MM-1 and PH-MM-2 would ensure that this effect is less than significant.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect PH-5:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood program alternatives are proposed for the reaches, it is assumed that Effect PH-5 could occur in all the program reaches. While all program reaches are not within 0.25 mile of a school, the program implementation will occur over an approximate 15 year period and additional schools may be built within that timeframe.

Effect PH-5 Finding	With Mitigation
Significant	Less than significant

Mitigation

Mitigation Measure PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities

WSAFCA will provide written notification of projects to each of the affected schools and the Washington Unified School District within 30 days prior to certification of the EIS/EIR and will consult with Washington Unified School District regarding potential effects on school children from hazards associated with project construction.

Section 3.18
Cultural Resources

3.18.1 Introduction

This section describes the regulatory and environmental setting for cultural resources; the effects on cultural resources that would result from the program; and mitigation measures that would reduce these effects. This section also discusses the prehistoric and historic background to better define the context of the cultural resources associated with the proposed study area.

The term *cultural resources* encompasses several types of resources, including archaeological, architectural, and traditional cultural properties (TCPs). Archaeological sites include both prehistoric and historic deposits, as well as submerged resources. Architectural properties are buildings, bridges, and infrastructure. TCPs are those locations of importance to a particular group. TCPs are frequently important to Native American groups because of the function the location serves in traditional ceremonies or other activities such as plant gathering. Cultural resources also include cultural landscapes, defined by McClelland et al. (1995:3) as "a geographic area that historically has been used by people, or shaped and modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features."

3.18.2 Affected Environment

3.18.2.1 Regulatory Setting

3.18.2.1.1 Federal

Section 106 of the National Historic Preservation Act

The proposed program would require a permit from USACE. The permitting Federal agency is required to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR 800). Section 106 of the NHPA requires that, before beginning any undertaking, a Federal agency must take into account the effects of the undertaking on *historic properties* (cultural resources eligible for listing on the National Register of Historic Places [NRHP]) and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on these actions. The Section 106 process has five basic steps.

1. Initiate the Section 106 process, including the identification of consulting parties, such as Native American tribes.
2. Identify and evaluate cultural resources to determine whether they are historic properties.
3. Assess the effects of the undertaking on historic properties within the area of potential effect (APE).

4. If historic properties may be subject to an adverse effect, the Federal agency, the State Historic Preservation Officer (SHPO), and any other consulting parties (including Native American tribes and the ACHP) continue consultation to seek ways to avoid, minimize, or mitigate the adverse effect. A memorandum of agreement (MOA) is usually developed to document the measures agreed upon to resolve adverse effects. Alternatively, the Federal agency may prepare and execute a Programmatic Agreement (PA) with the aforementioned parties to comply with 36 CFR 800, particularly in the context of complex undertakings that entail years of implementation actions or where the undertaking's effects on historic properties cannot be well characterized during the planning phase.
5. Proceed in accordance with the terms of the MOA or PA.

Specific regulations regarding compliance with Section 106 state that, although the tasks necessary to comply with Section 106 may be delegated to others, the Federal agency (in this case, USACE) is ultimately responsible for ensuring that the Section 106 process is completed according to statute.

Federal Historic Significance Criteria

For Federal projects, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. NRHP criteria for eligibility are defined below. To be considered eligible for listing in the NRHP, a property need only meet one, not all, of the significance criteria outlined below.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:

A. are associated with events that have made a contribution to the broad pattern of our history;
B. are associated with the lives of people significant in our past;
C. embody the distinct characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. have yielded, or are likely to yield, information important in prehistory or history (36 CFR 60.4).

3.18.2.1.2 State

CEQA requires that public agencies that finance or approve public or private projects must assess the effects of the project on cultural resources. CEQA requires that, if a project results in significant effects on important cultural resources, alternative plans or mitigation measures must be considered; only significant cultural resources, however, need to be addressed.

Therefore, before the level of significance of effects can be determined and appropriate mitigation measures developed, the significance of cultural resources must be determined. The following steps are normally taken in a cultural resources investigation to comply with CEQA:

1. Identify cultural resources.
2. Evaluate the significance of the cultural resources based on established thresholds of significance.
3. Evaluate the effects of a project on all cultural resources.

4. Develop and implement measures to mitigate the effects of the project on significant cultural resources.

Because the program is located on non-Federal land in California, it must comply with state laws pertaining to the inadvertent discovery of human remains of Native American origin. The procedures that must be followed if burials of Native American origin are discovered on non-Federal land in California are described in the Effects and Mitigation Measures section, below.

State Historic Significance Criteria

For a historical resource to be eligible for listing in the California Register of Historic Resources (CRHR), it must be significant at the local, state, or national level under one or more of the following criteria from 14 CCR 15064.5(a)(3)(A–D).

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in prehistory or history.

Historical resources automatically listed in the CRHR include those historic properties listed in, or formally determined to be eligible for listing in, the NRHP (PRC 5024.1).

In addition, CEQA distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource as defined above and "unique archaeological resources." An archaeological resource is considered unique if it:

- is associated with an event or person of recognized significance in California or American history or of recognized scientific importance in prehistory;
- can provide information that is of demonstrable public interest and is useful in addressing scientifically consequential and reasonable research questions; or
- has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind (PRC 21083.2).

Resources that qualify as unique archaeological resources also meet at least one of the CRHR criteria. It is current professional practice, therefore, to address the importance or significance of cultural resources by determining solely if it is eligible for listing in the CRHR, without the expressed distinction or determination as to its status as a unique archaeological resource. For the purposes of this program, significant cultural resources as defined by CEQA are defined as those resources that meet at least one of the CRHR eligibility criteria.

3.18.2.1.3 Local

Yolo County General Plan

Yolo County strives to encourage the enhancement of cultural quality and education in Yolo County through the development of goals, objectives, and policies that the county has established in the

Historic Preservation Element of the *Yolo County General Plan*, Part 1 (adopted July 1983) to preserve County history and historical sites.

HP 1—Goal: Yolo County shall support the preservation and enhancement of historic and prehistoric resources within the County when fiscally able.

HP 2—Objectives:

2.1: To preserve Yolo County's natural resources with historical significance by designating certain natural resources such as trees and vegetation as "historic" and by supporting a program to preserve them.

2.2: To preserve Yolo County's prehistoric resources by identifying and preserving Native American sites and other significant archaeological sites and by encouraging development of demonstration sites.

Yolo County adopted the following actions as means for helping achieve its goal and objectives:

- Identification of historic resources within the County;
- Recording the historic resources identified in the 1986 Yolo County Historic Resources Survey on the general plan map and maintenance and updating of the map for planning purposes;
- Adoption of a Historic Preservation Ordinance and the establishment of a Yolo County Historic Preservation Commission;
- Support for the conversion of older residential structures in commercial zones to commercial or office use and of older historically significant structures in agricultural areas to tourist uses through the use permit process while maintaining or enhancing their historical authenticity;
- Encouragement of County efforts to seek financing for the preservation of the County's historic resources;
- To encourage the property owners to revitalize their properties through incentives such as utilizing the Historic Building Code, easements, state and Federal tax exemptions as well as seeking Community Development Block Grant funds.

2.4: To promote museums to preserve the prehistorical, historical and agricultural heritage of Yolo County by the following actions:

- Continued support for the Yolo County Historic Museum;
- Promotion of museums within historic structures;
- Support for establishment of additional museums in the County.

2.5: To preserve the historical records of Yolo County and make them accessible to the public by maintaining the Yolo County Archives.

Solano County General Plan

Solano County Board of Supervisors conditionally adopted the new *Solano County General Plan* in August 2008. Solano County voters approved Measure T on the November 4, 2008 ballot and confirmed the Board of Supervisors' approval of the general plan. Chapter 4 of the new general plan addresses resources, including "substantial historic and prehistoric sites." Its purpose is to identify the goals and policies Solano County will implement in its daily decision-making process to protect

such resources. The following goals and policies, as stated in the *Solano County General Plan* on the county's website, pertain to cultural resources:

RS.G-1: Manage and preserve the diverse land, water, and air resources of the county for the use and enrichment of the lives of present and future generations.

RS.G-4: Preserve, conserve, and enhance valuable open space lands that provide wildlife habitat; conserve natural and visual resources; convey cultural identity; and improve public safety.

RS.P-38: Identify and preserve important prehistoric and historic structures, features, and communities.

RS.P-39: Tie historic preservation efforts to the County's economic development pursuits, particularly those relating to tourism.

RS.P-40: Consult with Native American governments to identify and consider Native American cultural places in land use planning.

Additionally, the new general plan provides implementation programs that identify specific action plans to achieve the goals and policies discussed above.

RS.I-25: Require cultural resources inventories of all new development projects in areas identified with medium or high potential for archeological or cultural resources. Where a preliminary site survey finds medium to high potential for substantial archaeological remains, the County shall require a mitigation plan to protect the resource before issuance of permits. Mitigation may include:

- Having a qualified archaeologist present during initial grading or trenching (monitoring);
- Redesign of the project to avoid archaeological resources (this is considered the strongest tool for preserving archaeological resources);
- Capping the site with a layer of fill; and/or
- Excavation and removal of the archaeological resources and curation in an appropriate facility under the direction of a qualified archaeologist.
- Alert applicants for permits within early settlement areas to the potential sensitivity if significant archaeological resources are discovered during construction or grading activities, such activities shall cease in the immediate area of the find until a qualified archaeologist can determine the significance of the resource and recommend alternative mitigation.

RS.1-26: Work with federal and state agencies to identify, evaluate and protect the county's important historic and prehistoric resources. Programs administered by such agencies may include:

- California Historical Landmarks, California Points of Historical Interest, California Register of Historic Resources, National Register of Historic Places, State Historic Building Code

RS.1-27: Refer to the state Senate Bill 18 guidelines and requirements regarding cultural resources. Programs the County will engage in may include:

- ensuring local and Native American governments are provided with information early in the planning process,
- working with Native American governments to preserve and protect Native American cultural sites by designating them as open space where possible,

- providing management and treatment plans to preserve cultural places, and working with Native American groups to manage their cultural places.

RS.1-38: Protect and promote the county's historic and prehistoric resources by:

- providing educational programs to the public, staff, and commissions that promote awareness of the county's history and the value in preserving historic or prehistoric resources; and
- exploring and developing historic or prehistoric sites that can be used appropriately as visitor-oriented destinations.

RS.1-29: Develop historic preservation programs and development guidelines to prevent the loss of significant historic buildings and structures. This should be done in conjunction with Program SS.I-16.

City of West Sacramento General Plan

The City of West Sacramento has adopted policies for identifying, evaluating and protecting historical resources in their general plan (revised and adopted December 2004) Section V Recreational and Cultural Resources Goals and Policies.

Goal F: To preserve and enhance West Sacramento's historical heritage.

Policies:

1. The City shall set as a high priority the protection and enhancement of West Sacramento's historically and architecturally significant buildings.
2. The City shall establish a historic district in the Old Broderick area and develop standards for preservation and rehabilitation of historic structures and compatible infill development.
3. The City shall cooperate in the expansion and updating of the Yolo County Historical Resources Survey.
4. The City shall work with property owners in seeking registration of historical structures and sites as State Historic Landmarks or listing on the National Register of Historic Places.
5. The City and Redevelopment Agency shall support the efforts of property owners to preserve and renovate historic and architecturally significant structures. Where such buildings cannot be preserved intact, the City shall seek to preserve the building façades.
6. Structures of historical, cultural, or architectural merit which are proposed for demolition shall be considered for relocation as a means of preservation. Relocation within the same neighborhood or to another compatible neighborhood shall be encouraged.
7. New development near designated historic landmark structures and sites shall be designed to be compatible with the character of the designated historic resource.
8. The City shall explore the possibility of establishing a city cultural center which might include a historical museum and an art gallery.
9. The City shall consider developing and maintaining the Stone Lock as a point of historical interest.

Goal G: To protect West Sacramento's Native American heritage.

Policies:

1. The City shall refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory, Northwest Information Center, at Sonoma State University.[1]

2. The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory [*sic*], Northwest Information Center, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse effects according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Appendix K of the State CEQA Guidelines.[2]

3. Archaeological sites shall be protected by means of requirements in development permits requiring on-site monitoring by qualified personnel of excavation work in areas identified as archaeologically sensitive. Development work shall be required to cease in any place where artifacts or skeletal remains have been discovered until these have been examined and evaluated by a qualified archaeologist and arrangements have been made to avoid or otherwise protect valuable resources.

3.18.2.2 Environmental Setting

3.18.2.2.1 Prehistoric Context

Although the Sacramento Valley may have been inhabited by humans as early as 10,000 years ago, the evidence for early human occupation is likely buried by deep alluvial sediments that accumulated rapidly during the late Holocene Epoch. Although rare, archaeological remains of this early period allegedly have been identified in and around the Central Valley. Johnson (1967) presents evidence for some use of the Mokelumne River area, under what is now Camanche Reservoir, during the late Pleistocene Epoch. These archaeological materials and similar materials in the region have been termed the Farmington Complex. Recent work in the vicinity of Camanche Reservoir, however, calls into question whether Farmington Complex exceeds an age of 10,000 Before Present (B.P.) (Rosenthal et al. 2007:151).

Preliminary results from Tremaine & Associates' recent excavations at Sacramento City Hall (Sacramento City Hall overlies the Nisenan village of Sacum' ne, CA-SAC-38) reveal the earliest confirmed habitation of the immediate Sacramento vicinity. Obsidian hydration readings on artifacts may represent use of the site from 3000–8000 B.P. Tremaine & Associates also ran three radiocarbon assays, which yielded conventional dates of 5870, 6690, and 6700 B.P. The radiocarbon assays were taken between 9.8 feet and 11.5 feet below ground surface (Tremaine 2008:99–101).

Later periods of prehistory are better understood because of their more abundant representation in the archaeological record. Fredrickson (1973) identified three general patterns of cultural manifestations for the period between 4,500 B.P. and 3,500 B.P.: the Windmiller, Berkeley, and Augustine Patterns.

[1] Note: the name of the California Archaeological Inventory has been changed to California Historical Resources Inventory System.
[2] Appendix K no longer applies to cultural resources and the text within the original Appendix K has been stricken from CEQA statutes.

The Windmiller Pattern (4500 B.P.–3000 B.P.) shows evidence of a mixed economy consisting of the generalized hunting of game, fishing, and use of wild plant foods. Settlement strategies during the Windmiller period reflect seasonal occupation of valleys during the winter and of the foothills during the summer (Moratto 1984).

Cultural changes are manifested in the Berkeley Pattern (3500 B.P.–2500 B.P.). Technological changes in groundstone from handstones and milling slabs to the mortar and pestle indicate a greater dependence on acorns, and the presence of a wide variety of projectile points and atlatls indicates hunting was still an important activity (Fredrickson 1973).

The Berkeley Pattern was superseded by the Augustine Pattern around Anno Domini (A.D.) 500, and reflects a change in subsistence and land use patterns similar to those of the ethnographically known people of the proto-historic era. This pattern exhibits a great elaboration of ceremonial and social organization, including the development of social stratification. Elaborate exchange systems, further reliance on acorns, and a wide variety of artifacts (flanged tubular smoking pipes, harpoons, clamshell disc beads, and an especially elaborate baked clay industry, which included figurines and pottery vessels called Cosumnes Brownware) are associated with the Augustine Pattern. Increased village sedentism, population growth, and an incipient monetary economy are also hallmarks of this pattern (Moratto 1984).

3.18.2.2.2 Ethnographic Context

The study area is located at the interface of three Native American groups: the Patwin (or Wintun), the Nisenan, and the Plains Miwok. The banks of the Sacramento River and associated riparian and tule marshland habitats were inhabited by the River or Valley Patwin. The Plains Miwok and Nisenan (also called Southern Maidu), while primarily occupying territories east of the Sacramento River, used land west of the river as well (Johnson 1978; Levy 1978; Wilson and Towne 1978).

The material culture and settlement-subsistence behavior of these groups exhibit similarities, likely because of historical relationships and a shared natural environment. Historical maps and accounts of early travelers to the Sacramento Valley testify that tule marshes, open grasslands, and occasional oak groves (Jackson 1851; Ord 1843; Wyld 1849) characterized the study area. The area was generally wet in the winter and often subject to flooding; the weather was exceedingly dry in summer. Much of the floodplain was presumably sparsely inhabited, and Native Americans typically situated their larger, permanent settlements on high ground along the Sacramento and American Rivers (Bennyhoff 1977; Kroeber 1925, 1932; Levy 1978; Wilson and Towne 1978).

The Native American economy in the study area was based principally on the use of natural resources from the riparian corridors, wetlands, and grasslands adjacent to the Sacramento River. Fish, shellfish, and waterfowl were important sources of protein in the diet of these groups (Johnson 1978; Kroeber 1932). Salmon, sturgeon, perch, chub, sucker, pike, trout, and steelhead were caught with nets, weirs, lines and fishhooks, and harpoons. Mussels were harvested from the gravels along the Sacramento River channel. Geese, ducks, and mudhens were hunted using decoys and various types of nets. The majority of important plant resources in the Patwin diet came from the grasslands of the Sacramento River floodplain (Stevens 2004a: Table 1). Plants important to California Indians were also obtained from and managed in valley wetlands (Stevens 2004b:7). In addition to the staple acorn, a number of plants were important secondary food sources, including sunflower, wild oat, alfalfa, clover, and bunchgrass (Johnson 1978).

3.18.2.2.3 Historic Context

Early History

The study area is located in Yolo and Solano Counties. The two counties are part of the original 27 counties created when California became a state in 1850. Woodland serves as the county seat of Yolo County. The city of Benicia was the original county seat of Solano, but in 1858 the seat moved to Fairfield (Kyle et al. 1990).

Spanish explorers visited Yolo and Solano Counties as early as the 1700s in their search for suitable inland mission sites. In 1772, Pedro Fages passed through San Francisco Bay and the Delta and reached the San Joaquin and Sacramento rivers. Between 1793 and 1817, several other mission site reconnaissance expeditions were conducted. The first European American to travel through the area was Jedediah Strong Smith who, in the late 1820s, reported to the Hudson's Bay Company on the quantity and quality of furs in California. Joseph Walker and Ewing Young, during separate excursions, followed his general path in the 1830s. Mexican, American, and European settlers began to arrive and set down roots within the boundaries of the two counties in the 1840s and 1850s (Kyle et al. 1990).

Sacramento River

The Sacramento River played an important role in the development of Yolo and Solano Counties prior to and including Euroamerican occupation of the region. The river was a convenient landmark for the early explorations that also facilitated reconnaissance of the Sacramento Valley. The Spanish, in 1817, were the first Europeans to traverse the portion of Sacramento River that passes through the program study area, having made an exploratory boat trip up the river as far as its confluence with the Feather River (Goldfried 1988:8). This expedition was followed by a series of Spanish, Russian, British, and American land and water forays up the Sacramento River from the 1820s through 1840s (Goldfried 1988:8–9).

River traffic through the program study area became more frequent between 1839 and 1848 with the establishment of John Sutter's fort at his New Helvetia Rancho, as well other settlements upriver hosted by Peter Lassen, John Sinclair, John Bidwell's, and others (Goldfried 1988:9; Lydecker and James 2009:9; Sutter et al. 1996 [1845–1848]:1–3). The 1848 gold discovery at Coloma, however, was responsible for the vast increase in Sacramento River traffic in the program study area through the 1850s, as Sutter's embarcadero, at what is now Old Sacramento, served as the principal point of departure for persons and goods headed for the Sierra Nevada diggings. Crews frequently abandoned their ships at the embarcadero during the Gold Rush, leaving them to sink or be converted by others into warehouses, stores, and hotels on the river. (Goldfried 1988:11.)

The city of Sacramento and the communities of Washington and Riverbank/Bryte provided a lasting draw to river traffic through the 1920s because water transportation was a convenient and efficient way to move large amounts of goods and people to and from San Francisco and points beyond. River transportation from the mid-19th century through the early 20th century resulted in numerous marks along the river corridor, including ferries, wharves, shipwrecks, and numerous communities (Lydecker and James 2009:28, Figure 2-2).

Yolo County

The decline of the California Gold Rush resulted in disenchanted miners who realized they could make a greater fortune through farming and ranching rather than gold prospecting, transforming Yolo County from an isolated farming community into a booming agricultural region. Through both the mid-19th and 20th centuries, Yolo County commerce was generally agrarian in focus, the main crops being wheat, barley, and other grains. Commercial enterprises related to agriculture and livestock also sprang up during this period, furthering the development and growth of the region (Larkey and Walters 1987).

Settlement

Yolo County's first town was Fremont, founded in 1849 near the confluence of the Sacramento and Feather Rivers (south of present-day Knights Landing). It became the first county seat in 1850. After the damaging flood of 1851, the county seat was moved to the town of Washington (now part of present-day West Sacramento). Between 1857 and 1861, the county seat moved from Washington to Cacheville (present day Yolo) and back to Washington. However, in 1862, more flooding episodes had motivated the community voters to select the centrally located town of Woodland as the permanent county seat (Kyle et al. 1990).

Present-day West Sacramento experienced little growth until the early 1900s when levee construction along the Sacramento River encouraged settlement and development of the area. Early settlers included Jan Lows de Swart (holder of the Rancho Nueva Flandria land grant), and James McDowell. In 1911, the West Sacramento Company laid out the community of Riverbank (later called Bryte) just west of the Sacramento River. Shortly thereafter, plans were underway for the establishment of the town of West Sacramento (Corbett 1993).

Irrigation

Between 1911 and 1918, hundreds of miles of levees were constructed in order to control flooding in the Sacramento Valley. As early as 1892, farmers of Yolo County came together to construct levees along the Sacramento River from the town of Washington to roughly 9 miles downstream. In March 1911, the Sacramento Land Company (formerly the West Sacramento Land Company) assisted with the establishment of Reclamation District (RD) 900 in what is now West Sacramento. The formation of this district created a framework for using public funds through bonds, levies, and taxes to drain the land (Corbett 1993; Walters 1987).

Under the direction of civil engineers Haviland & Tibbetts, formation of RD 900 began. The district spanned 11,500 acres from the east-west line of the Southern Pacific Railroad (SPRR) tracks, south to the vicinity of Riverview. Construction involved installing drainage canals, levees, and pumphouses. The canals carried drainage to the pumphouses, which, in turn, moved the water over the levees into the Yolo Bypass. As the land was drained of water, the fields of tules were removed, establishing acres of agricultural land (Corbett 1993). Reclamation districts such as RD 900 frequently result in historically and functionally cohesive, patterned modifications of rural areas through their networks of irrigation works, roads, boundary markers, and buildings. Such rural historic landscapes have been documented in the Sacramento Valley, some of which—such as RD 1000 in Sacramento and Sutter counties—have been determined eligible for listing in the NRHP (Bradley and Corbett 1995; Jones & Stokes 2004; JRP Historical Consulting Services 1994; Peak 1997).

Following World War I, West Sacramento remained an unincorporated area populated primarily by small farms and a handful of industries. By the 1920s, the main east-west transcontinental highway (U.S. Highway 40, now West Capitol Avenue) traveled through West Sacramento; within a few years several hotels and motels were constructed along its route through town. During World War II, factories and other industries began to prosper along the west bank of the Sacramento River. Following the war, the region—like much of the state—experienced a housing boom that would last for several decades (Corbett 1993).

In 1987, after numerous previous attempts, the City of West Sacramento was officially incorporated. The new city included the former communities of Broderick, Bryte, and surrounding urban and rural areas on the west side of the Sacramento River into Southport (Walters 1987).

Solano County

Throughout the 19th century, land in Solano County was used primarily for wheat and alfalfa crops, cattle ranching, and some small orchards. Tall and expansive stands of wild oats attracted cattle and sheep ranchers to central Solano County and contributed to the region's early growth. Over time, however, prosperous grain and stock farms occupied land in the area. With collapse of the "wheat boom" in the 1890s, alfalfa supplanted wheat as the dominant grass crop, and it remained the area's primary crop through the turn of the 20th century. In addition to growing crops, settlers also raised poultry, pigs, sheep, dairy cows, and beef cattle (Hunt 1926; Thompson and West 1878).

The cultivation of fruits and vegetables was also extremely successful. Small orchards initially made up of a few fruit trees grown for private consumption of fruit quickly developed into large commercial orchards. Solano County continued to be a major fruit-producing region through the early twentieth century, when the region's growth and prosperity became increasingly unstable because of the faltering post-World War I economy.

Additional problems included soil exhaustion, flooding, erosion, periods of drought, and diseases harmful to the fruit trees. The combination of these forces contributed to the general decline of the fruit industry, and many orchards gave way to the bulldozer or were abandoned (Wickson 1888; Keegan 1989).

Development

Vacaville and Fairfield are two major cities in Solano County. In 1843, Mexico granted ten leagues named *El Rancho Los Putos* to Manuel Cabeza de Vaca and Juan Felipe Peña in the area that is now part of Vacaville. In 1850, settler Manuel Vaca deeded 23.3 square kilometers (9 square miles) of his land to settler William McDaniel with the proviso that a town be established and named after Vaca. Surveyors drafted plans for the new town and within a few years, the settlement featured numerous businesses that were established to serve the growing agricultural community, which was almost solely dependent on fruit production. The town incorporated in 1892 (Limbaugh and Payne 1978).

The city of Fairfield is located on lands that were originally part of the Tolenas and Suisun land grants. In 1858 Captain R. H. Waterman acquired the land and offered Solano County 16 acres for use as a county seat. The county voters accepted Waterman's offer, making the new town of Fairfield (named after Waterman's hometown in Connecticut) the new county seat, which it has been ever since. Fairfield developed more slowly than nearby communities, and it was not until the mid-20th century completion of Travis Air Force Base (originally Fairfield-Suisun Army Air Base) that the city's population began to thrive (Hunt 1926; Kyle et al. 1990).

In addition to Travis Air Force Base, the expansion of Basic Vegetable Products Company and the California State Prison contributed to the county's overall development in the 20th century. In recent years, the Vacaville/Fairfield area has grown into a bedroom community of the San Francisco Bay Area.

Irrigation

Until the middle of the 20th century, there were no large-scale irrigation systems in Solano County, and farmers relied on small irrigation efforts and annual rainfall to water their crops. In 1916, William Pierce of Suisun City proposed the damming of Putah Creek at Devil's Gate west of the town of Winters to create a 1.5-million-acre-foot reservoir in the Berryessa Valley. Pierce's idea was not adopted until more than 20 years later. In 1940, the Solano County Board of Supervisors created the Solano County Water Council to study local water needs, investigate available water sources, collect data, and make recommendations. Around the same time, the U.S. Department of the Interior, Bureau of Reclamation, and USACE began developing the Solano Project, which would tap into the Putah and Cache Creeks for water to supply the nearby agricultural and urban areas. The project consisted of three main facilities: the Monticello Dam and Lake Berryessa, the Solano Diversion Dam, and the Putah South Canal, which originates at the diversion dam and conveys water south to Solano County. All three projects were completed in 1957. The water provided by the Solano Project, in conjunction with later efforts, allowed continued urban and agricultural growth in the county (Goerke-Shrode 2002; Harnes 2002).

3.18.3 Environmental Consequences

This section analyzes the effects relating to cultural resources for the proposed program. It describes the methods used to determine the effects of the program and lists the thresholds used to conclude whether an effect would be significant. Measures to mitigate (i.e., avoid, minimize, rectify, reduce, eliminate, or compensate for) significant effects accompany each effect discussion.

3.18.3.1 Assessment Methods

3.18.3.1.1 Cultural Resources Identification Efforts

The present assessment of environmental consequences differs from many NEPA/CEQA cultural resource assessments for proposed projects with discrete footprints and straightforward implementation horizons. The proposed program identifies several categories of actions that have the potential to affect cultural resources, but at the present level of detail available these activities cannot be delineated into discrete project footprints. At the same time, the individual projects under the program are not necessarily expected to result in effects on cultural resources throughout every portion of the program study area. Furthermore, the proposed program consists of an array of actions that would be implemented—sometimes repeatedly—over the course of several years in various locations within the program study area. The Corps has determined that implementation of a PA and Historic Properties Management Plan (HPMP) is the most effective way to accommodate both the program requirements and compliance with CEQA, NEPA, and the NHPA, as permitted at 36 CFR 800.4(b)(2) and 800.14(b). The HPMP will allow the incremental identification, documentation of effects on, and mitigation of significant effects on historic properties as a result of the program.

Under this compliance strategy, complete field examination of the program study area is unnecessary, although enough background data need to be collected to place cultural resource effects into context. Efforts in this regard consist of literature reviews and records searches, historic map research, and consultation with Native Americans. No pedestrian surveys have been conducted for this program analysis.

Records Search

ICF International staff requested a records search in October 2007 at the Northwest Information Center and the North Central Information Center of the California Historical Resources Information System located at Sonoma State University and California State University, Sacramento, respectively. The research consisted of a database search of all previously recorded sites and studies within the study area, established as a 0.25-mile-wide corridor from the center of the river to along both shorelines for the entire length of the study area, including the DWSC. The search also consulted the current listings for the NRHP, the CRHR, Historic Spots in California (Kyle et al. 1990), and pertinent historic inventories and historic maps (Anonymous 1877; Department of Parks and Recreation 1976, 1996; North Central Information Center n.d.; Office of Historic Preservation 2007a:12–14, 2007b:2, 11–14, 31, 2007c:21–70, 2007d:155–157; U.S. Geological Survey 1907, 1908).

Shipwrecks Database

ICF International consulted the California State Lands Commission's Shipwrecks Database (2009) to determine whether historic shipwrecks may be present in the program study area. The database was searched by selecting Yolo County in the search field, which generated a list of 12 shipwrecks in Yolo County. The database search yielded latitude and longitude coordinates for 11 of the shipwrecks, which were plotted using an online mapping program (http://www.itouchmap.com/latlong.html) to determine whether any of the shipwrecks were in the study area.

Native American Consultation

In January 2008, ICF International cultural resources staff contacted the Native American Heritage Commission (NAHC) to request a search of their Sacred Lands File. The NAHC staff responded in January 2008 with a list of Native American contacts for both Yolo and Solano Counties and the results of the sacred lands data base research that was negative for findings in the program corridor.

The NAHC contact list included the following federally recognized Native American tribes:

- Rumsey Indian Rancheria of Wintun Indians
- Cortina Band of Wintun Indians (including the Wintun Environmental Protection Agency)
- Ione Band of Miwok Indians

The NAHC also provided contact information for the following federally non-recognized Native American groups and individuals:

- Kesner Flores
- Wilton Miwok Rancheria

ICF International staff sent letters to the Native American contacts on the lists provided by NAHC. The correspondence included a map depicting the program corridor, a brief description of the

proposed program, and a request for the contacts to share any knowledge or concerns they may have regarding cultural resources in or adjacent to the study area. ICF International received a letter response dated April 2008 from Mr. Marshall McKay, Tribal Chairman for the Rumsey Band of Wintun Indians. Mr. McKay's letter stated his gratitude for the letter notification about the proposed levee alternatives and that he was not aware of any sites of religious or cultural importance in the program corridor. Mr. McKay also stated that the Rumsey Indian Rancheria of Wintun would like to be notified of any cultural finds unearthed during construction actions. ICF International staff placed follow-up telephone calls to the letter recipients on June 5, 2009. Voice messages were left with the contacts. To date, no return phone calls have been received.

Results

The records search identified numerous studies previously conducted in the study area. Most were small areal studies that included a portion of the study area. However, a limited number of the previous studies were linear studies conducted along a larger portion of the levee or adjacent to it. The more recent studies were located in areas that incorporated portions of the project-level areas and will be discussed in the project-level analysis below. The majority of the study area has not been subjected to cultural resource studies more recently than 1993, and the three primary studies conducted along the DWSC were conducted in 1976 and 1985 (Seldomridge and Smith-Madsen 1976; Werner 1985a, 1985b). Studies of submerged cultural resources along study area portions of the Sacramento River have also been conducted (Allan 2002a, 2002b; Allan et al. 2002; California State Lands Commission 1988).

Having been conducted more than 10 years ago, the majority of these previous studies are now outdated. Since the time of those studies, ground surface conditions in the study area may have changed, and built environment features such as buildings and structures, and or linear features are likely to have become at least 45 years old[3]. Advancements in the field of cultural resource management make it likely that previously unidentified or unrecognized resources would be identified if a survey were to be conducted today. In other words, the passage of 10 years or more renders it likely that previously unidentified cultural resources would be identifiable at present in portions of the study area. Therefore, the majority of the program corridor is considered in need of being resurveyed either at an intensive or at least a reconnaissance-level of investigation.

Setting aside the need for a comprehensive survey of the program study area, Table 3.18-1 summarizes the known cultural resources located in the program study area.

[3] Although the NRHP typically only considers properties that are 50 years or older for listing, the Office of Historic Preservation (1995:2) employs a 45-year threshold for the recordation of cultural resources because "there is commonly a five year lag between resource identification and the date that planning decisions are made."

Table 3.18-1. Cultural Resources Located in the Program Study Area by Reach

Resource Name/Number	Resource Description	Resource Eligibility
Sacramento Bypass Levee		
YOL-HRI-8/242	Historic—Sacramento Weir and Yolo Bypass	Determined eligible for NRHP/CRHR listing
Sacramento River North Levee		
CA-YOL-24	Prehistoric mound site	Unevaluated
CA-YOL-25	Prehistoric mound site	Unevaluated, site appears to have been destroyed (Bouey with Herbert 1990:40)
CA-YOL-HRI-8/219	Historic- water tower	Unevaluated
CA-YOL-HRI-8/221	Historic—John White House 610 Second Street	Not eligible; has been demolished (Les 1986:1)
P-57-000423	Historic (waterside) remains of four wood dolphins and pilings, remains of Texas Company wharf	Unevaluated
CA-YOL-27	Prehistoric mound site	Unevaluated
Yolo Bypass Levee		
P-57-000400	Historic—California Pacific Railroad	Unevaluated
Port North Levee		
C-1112	Prehistoric—single human vertebrae	Unevaluated
Port South Levee		
No resources previously recorded and no new resources identified.		
Sacramento River South Levee		
P-57-000425	Historic—waterside remains of wood pilings, possible remains of Lufkin Landing wharf.	Ineligible
P-57-000607 (CA-YOL-222-H)	Historic—waterside wharf remnants	Recommended ineligible
CA-YOL-132	Prehistoric midden site	Unevaluated
South Cross Levee		
No resources previously recorded		
P-48-787	Historic Prospect Island Levee	Unevaluated

In addition to the cultural resources identified in Table 3.18-1, the State Lands Commission's shipwreck database and California State Lands Commission (1988:47, 53, 59, 77, 87) indicate that approximately 16 shipwrecks have been reported in the study area. Their presence in the study area has not been confirmed, however. The shipwrecks are subject to displacement by river currents, salvaging, and destruction by waterside development.

3.18.3.2 Determination of Effects

3.18.3.2.1 Federal Criteria

According to 36 CFR 800.5, an undertaking would have an adverse effect on historic properties if the effect alters the characteristics[4] that make a property eligible for inclusion in the NRHP. Such effects also would be considered adverse under NEPA. Adverse effects can occur when prehistoric or historic archaeological sites, structures, or objects listed in or eligible for listing in the NRHP are subjected to the following phenomena:

- physical destruction of or damage to all or part of the property;
- alteration of the property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines;
- removal of the property from its historic location;
- change in the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- neglect of the property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization; or
- transfer, lease, or sale of the property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

3.18.3.2.2 State Criteria

CEQA defines a significant impact on cultural resources in 14 CCR 15064.5(b) (1) and (2) as one with the potential to cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. Substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired. The significance of a historical resource is materially impaired when a project results in demolition or material alteration in an adverse manner of those physical characteristics of a resource that:

- convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR;

[4] Cultural resource managers often refer to these characteristics as character-defining elements or features. Character-defining features are those characteristics of a historic property, historical resource, or unique archaeological resource that convey its significance; the loss of character-defining elements impedes a property's ability to convey its historical significance. The importance of character-defining elements in cultural resource assessments is made clear in *National Register* Bulletin 15, which mentions "character" in this context 42 times (Andrus and Shrimpton 1997).

- account for its inclusion in a local register of historical resources pursuant to PRC 5020.1(k) or its identification in a historical resources survey meeting the requirements of PRC 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

3.18.3.3 Effects and Mitigation Measures

This section describes the potential effects on cultural resources that would result from the proposed program and the mitigation measure that would either reduce the effects to less-than-significant levels or would reduce the severity of the effect. These effects and mitigation measures would apply to the entire study area and all proposed levee alternatives. For buried cultural resources, the project alternatives that seem likely to pose the least amount of ground-altering disturbance are the use of the slurry wall and the rock slope protection. However, these methods still require staging areas, access, heavy equipment, and vegetation clearing. As a result, the following effects and mitigation measures would still apply. Additionally, if a slurry wall trench is excavated into native soils beneath the levee, the excavation could intersect buried archaeological resources, if present.

3.18.3.3.1 No Action Alternative

Under the No Action Alternative, it is presumed that no ground-disturbing activities associated with levee repair and alternatives would occur. However, it is possible that without the planned levee alternatives, the levee could fail and a cultural resource could be in the path of an inundation of debris and mud from that failure that could cause significant damage to or the complete destruction of the resource. Furthermore, emergency efforts to stop and repair a failed levee potentially would cause the same or more significant effects than those described for the proposed program. Whether these events would transpire and affect cultural resources is unknown and therefore further analysis of these effects would be speculative. Federal agencies responsible for levee repairs would be responsible for compliance with Section 106, as would local governments responsible for carrying out Federal programs.

3.18.3.3.2 Flood and Recreation Program Alternatives

Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes

Proposed flood and recreation program alternatives may occur near built-environment resources (including historic levees) cultural landscapes that are more than 45 years old and may be eligible for listing in the NRHP or CRHR. The implementation of alternatives may lead to physical demolition, destruction, relocation, or alteration of resources that are potentially NRHP- and/or CRHR-eligible. An inventory and evaluation of the resources in the proposed alternative areas is necessary to determine the eligibility of the known or unknown resources and to assess the potential direct effects that may be significant.

The program-level PA and attached HPMP mentioned in Section 3.18.3 define the tasks necessary to identify, determine the eligibility of, and treat historic properties in the APE.

Program Alternatives Associated with This Effect

Implementation of these alternatives can cause Effect CR-1:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, Effect CR-1 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass.

Effect CR-1 Finding	Finding with Mitigation
Significant	Significant and unavoidable

Effect CR-2: Change in the Significance of an Archaeological Resource

The proposed program study area has not been recently (within the last 10 years) or completely inventoried for the presence of cultural resources and therefore may contain significant archaeological resources as defined by Section 106 of the NHPA, NEPA, and CEQA. In addition, as outlined in Table 3.18-1, three previously recorded prehistoric archaeological sites (CA-YOL-24, CA-YOL-25, and CA-YOL-27) are located in the area encompassed by the Sacramento River North Levee, although CA-YOL-25 is thought to have been destroyed (Bouey with Herbert 1990:40). In addition, several shipwrecks have been identified and may still be extant in the program study area. Ground-disturbing and construction activities associated with the levee alternatives may result in damage to or destruction of these or other archaeological resources that may be eligible for the CRHR or NRHP. The physical damage to, or the destruction of, an eligible archaeological resource that results in a significant change in the significance of that resource would constitute a significant effect under CEQA (14 CCR 15064.5) and a significant effect under Section 106 of the NHPA and NEPA. Therefore, the effect on archaeological resources would be significant and unavoidable.

As stated earlier in this section, the program-level PA stipulates the preparation of a Historic Properties Management Plan (HPMP), which defines the tasks necessary to identify, determine the eligibility of, and treat historic properties in the APE.

Program Alternatives Associated with This Effect

Implementation of these alternatives could cause Effect CR-2:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, Effect CR-2 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass.

Effect CR-2 Finding	Finding with Mitigation
Significant	Significant and unavoidable

Effect CR-3: Disturbance of Native American and Historic-Period Human Remains

Only approximately 10% of the program corridor has been subjected to a formal pedestrian survey considered adequate for the inventory of cultural resources present in the APE. It is not known whether buried human remains are located in the program study area corridor. However, the program corridor is located within a geographic area that is considered of moderate to high sensitivity for archaeological cultural remains, including burials. The potential for buried human remains to be unearthed and disturbed during ground-disturbing activities that would be associated with levee repair and alternative construction within the study area is considered high. The disturbance of any human remains is considered a significant effect. Implementation of the human remains discovery provisions in the program HPMP would likely reduce the severity of this effect, but it would still be considered a significant and unavoidable effect.

Program Alternatives Associated with This Effect

Implementation of these alternatives could cause Effect CR-3:

Program	Alternative	
Flood	▪ Levee raise (in place) ▪ Levee raise (adjacent) ▪ Levee raise (full) ▪ Rock slope protection ▪ Jet grouting ▪ Seepage berm ▪ Closure ▪ Setback levee	▪ Flood wall ▪ Slurry cutoff wall ▪ Relief wells ▪ Interior drain ▪ Slope flattening ▪ Sheet pile wall ▪ Stability berm
Recreation	▪ Trails ▪ Riverside parks	▪ Developed water access ▪ Special projects

Affected Reaches

Although different flood and recreation program alternatives are proposed for the reaches, Effect CR-3 could occur in all the program reaches: Sacramento River North, Sacramento River South, Port North, Port South, South Cross, DWSC East and West, Sacramento Bypass, and Yolo Bypass.

Effect CR-3 Finding	Finding With Mitigation
Significant	Significant and unavoidable

Mitigation

As stated earlier in this section, the resolution of any adverse effects will be addressed in accordance with the stipulations of the program PA between the Corps, WSAFCA, and SHPO. Execution of the PA, which is accomplished upon the signing of the document by all consulting and concurring parties, constitutes compliance with the Section 106 consultation process and for the proposed program will be completed before the Record of Decision is signed. The HPMP, which is an attachment to the program PA, provides the specific, detailed measures to be implemented for the project. As directed by the Corps, and in consultation with the SHPO, the WSAFCA or its agent shall implement the HPMP. Following are expected mitigation measures in the HPMP.

- Develop and monitor implementation of architectural criteria to guide the design process within the APE.
- Prepare Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation.
- Conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings in the Event of Relocation.
- Develop and monitoring implementation of protection measures during construction.
- Conduct a post-construction condition assessment of the APE;
- Develop public interpretive material.

- Prepare a Mitigation Implementation Plan for each phase of the project to be used as a communication tool for coordinating construction activities with the prescribed protection and treatment measures.
- Expose archaeological features or deposits within the APE that could be affected by the project.
- Sample archaeological features or deposits to determine whether they meet research design requirements.
- Evaluate the significance of any archaeological resources that are identified.
- Conduct data recovery procedures for any eligible properties.
- Devise strategies for the avoidance of significant cultural resources during program implementation.

Chapter 4
CHP Academy Early Implementation Project

4.1 Introduction

This chapter provides the project-level analysis for the CHP Academy EIP. The analysis of effects for the CHP Academy EIP tiers directly from the program analysis. To avoid repetition and for communication efficiency, background information that is general for the study area or common for all reaches or alternatives is summarized in this chapter and the reader is referred to Chapter 3 for further discussion. Site- specific setting and environmental consequence information is provided here to more fully explain the effect and the mitigation measures that would be implemented to reduce that effect. As stated in Chapter 3 for the WSLIP program-level analysis, the baseline environmental conditions used in this EIP analysis consist of the existing physical environment as of January 28, 2009, when WSAFCA published the Notice of Preparation (NOP) to prepare an EIR with the State Clearinghouse. USACE published a Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on January 27, 2009.

Note: For readability, the pages in this chapter for the project-level analysis are numbered consecutively. The resource topics follow the same sequence as the Chapter 3 program analysis but the heading numbers vary based on the need for up-front text specific to the project-level analysis.

4.2 Purpose and Need

The purpose of implementing treatments at the CHP Academy site is to achieve a minimum of 200-year flood protection at the site (0.5% AEP), which would ultimately help reduce flood risk for the entire city of West Sacramento.

The approach to meet this purpose, as with the programmatic approach, is to provide an evaluation of the CHP Academy EIP site, develop alternatives for improvement, and provide a basis for partnerships with Federal and state agencies to implement improvements that meet the flood protection and compatible recreation and open space goals. The objectives under this purpose and approach are to:

- construct levee improvements as soon as possible to reduce flood risk as quickly as possible;
- construct improvements that are politically, socially, economically, and environmentally acceptable;
- provide recreation and open space elements for the city that are compatible with flood improvement actions; and
- ensure continuing Federal assistance for levee repairs and maintenance.

The general purpose of and need for action at the CHP Academy site are the same as described for the overall WSLIP in Chapter 1 (Section 1.4). Specific levee deficiencies at this site are through-seepage, geometry, and under-seepage, along with short reaches of instability. Flood and recreation improvements implemented under the CHP Academy EIP would assist in incrementally achieving

the purpose of and need for the WSLIP and would reduce local flood risk in the proximity of the project.

4.3 Alternatives

4.3.1 CHP Academy Project Alternatives

4.3.1.1 Introduction

The CHP Academy EIP area is approximately 6,500 feet long and is located on the Sacramento Bypass Levee, (Figure 4-1). The easternmost 1,200 feet of the waterside slope of the levee (adjacent to the weir) is lined with a concrete cap. This concrete cap prevents the levee from eroding when the weir is open and water is allowed to enter into the Sacramento Bypass from the Sacramento River. A stability berm and an interior drain system installed as part of the West Sacramento Project in 1999 runs the length of the levee on the landside. As stated above, deficiencies at this site are through-seepage, geometry, and under-seepage, along with short reaches of instability.

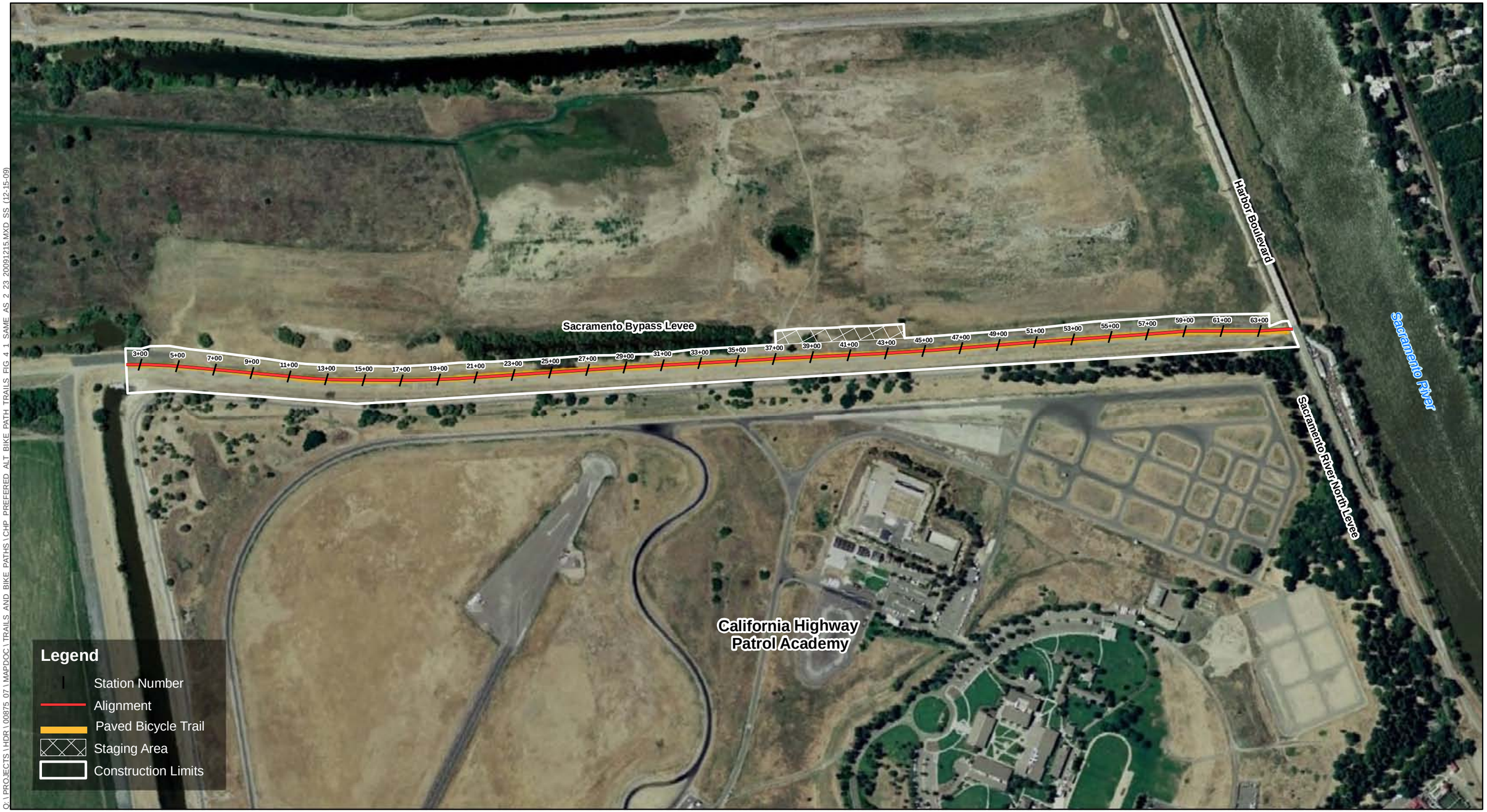
4.3.1.2 CHP Academy Alternatives Screening

WSAFCA considered a range of program alternatives that would address the deficiencies at the CHP Academy site. The improvement alternatives were narrowed as listed below.

- Alternative 1: slope flattening, slurry cutoff wall
- Alternative 2: slope flattening, seepage/stability berm
- Alternative 3: stability berm with interior drain, relief wells

As introduced earlier in Section 2.2.2.3, WSAFCA established and applied nine criteria to qualitatively evaluate the alternative improvements and eliminate those alternatives that did not adequately meet the criteria. The criteria are below.

- **Meet the Project Objectives to Reduce Risk**—The objective of the project is to alleviate through- and under-seepage concerns on this portion of the levee, as well as stability and geometry. Alternatives that provide the greatest reduction in subsurface water pressure (measured as the exit gradient of water moving through the soil) and improve slope stability and geometry relative to current levee standards are the most favored. Evidence of seepage has been observed at this site during previous high-water events.
- **Availability of Funds**—Levee repairs are necessary throughout the Sacramento River watershed. Federal and state monies as well as local matching monies must be spent thoughtfully to enable all the necessary levee improvements to be constructed. The preferred alternative would allow WSAFCA to implement the action through existing revenue sources without a cost-sharing partner or through demonstrating compatibility and creditability with state and Federal funding sources.
- **Scalability of Construction**—The scalability of an alternative refers to the ability of the design and construction documents to be increased or decreased if issues arise with contract financing or an unstable construction bid climate. Alternatives such as cutoff walls or seepage berms that can be partially constructed, as funds allow, are more desirable than setback levees or relief well



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Flood Control Improvements

Station Interval	APA Levee Treatments	Alt B Levee Treatments
2+20 to 18+00	Waterside slope flattening	Stability berm, interior drain, and relief wells
18+00 to 64+00	Waterside slope flattening and slurry cutoff wall	Stability berm, interior drain, and relief wells

N

0 250 500 1,000 Feet

Figure 4-1
The CHP Academy EIP Applicant Preferred Alternative and Alternative B

Note: This figure is the same as 2-23 and is provided here for your convenience.

systems that are not compatible with partial construction techniques. Alternatives that facilitate the ability to connect future adjacent improvements to the selected site without significant rework or cost are favored.

- **Real Estate Requirements**—An alternative that requires large land acquisition from private owners, such as a setback levee, is potentially cost prohibitive. Real estate acquisition may also present challenges with public and political acceptance. Temporary construction easements would not create as many issues as the need for permanent easements or fee-title acquisition. Alternatives requiring little to no additional flood protection easement are favored.
- **Land Use Compatibility**—The future land use of the areas on or adjacent to the proposed levee improvements should be taken into consideration. If known projects exist or have been approved by the City along the affected levee reach, alternatives should be evaluated with consideration of the degree to which they disrupt or interfere with such land uses. Alternatives that do not require modification to existing land-use plans adjacent to the site are favored.
- **Permit Requirements**—Permit requirements can greatly influence how soon an alternative can be implemented and flood protection can be provided. Projects that do not require numerous complex Federal, state, or local authorizations are favored.
- **Environmental Constraints (such as biological and cultural resources)**—Locations along the river support habitat critical to threatened or endangered species such as the valley elderberry longhorn beetle or the giant garter snake. In addition, the river corridor has a rich history of human use and contains cultural resources significant to that history. The environmental review and permitting process for effects to these types of resources can be lengthy and delay construction of improvements. Therefore, alternatives that avoid effects to these resources are preferable.
- **Integration of Multiple Objectives**—Propositions 50 and 84 include the goals of integrating multiple objectives to address a range of public policy priorities, leverage funding, integrate and coordinate projects, and achieve economies of scale. The community benefits from the coordination of levee improvements with other planned projects as it would enable the City to realize other goals in concert with flood protection goals and provide potential economies of scale, while minimizing disruption. Alternatives that facilitate realization of other objectives within the project area are favored.
- **Evolving Technical Policy**—The risks associated with evolving technical policy are also considered. Future policy may require seismic stability of levees or vegetation-free zones that vary from current conditions. These may also eventually lead to stricter design guidelines for levee construction protecting highly urbanized areas. The potential effects of this evolving policy are included in the consideration of alternatives. Alternatives that have low risk of major reinvestment based on any foreseeable change in acceptance criteria are favored.

In some cases, an alternative may partially meet a criterion while another meets it more fully. For this reason, the designations of more favorable (MF) and less favorable (LF) were applied to each criterion for each alternative. Table 4-1 below provides the results of the criteria evaluation.

Table 4-1. Evaluation of CHP Academy EIP Alternatives

Evaluation Criteria	Alternative 1 (slope flattening, slurry cutoff wall)	Alternative 2 (slope flattening, seepage/stability berm)	Alternative 3 (stability berm with interior drain, relief wells)
Meet the Project Objective to Reduce Risk	MF	MF	MF
Availability of Funds	LF	LF	LF
Scalability of Construction Project	MF	LF	LF
Real Estate Requirements	MF	LF	LF
Land-Use/Project Compatibility	MF	LF	LF
Permit Requirements	LF	LF	LF
Environmental Constraints	MF	LF	LF
Integration of Multiple Objectives	MF	LF	LF
Evolving Technical Policy	MF	MF	MF

Alternative 1 appears to be the most favorable levee improvement strategy based on this qualitative evaluation of various potential levee repair alternatives for the CHP Academy site. Repairing this site through the installation of a slurry cutoff wall requires the smallest temporary and permanent footprint for implementation. The estimated costs of constructing the improvements for all the alternatives are $5 million to $10 million. However, the reduced footprint of Alternative 1 will likely result in reduced real estate acquisition (and costs) and environmental impacts. Further, the installation of a soil-bentonite cutoff wall is compatible with the recreation features planned by the City for this location. Based on these considerations Alternative 1 is the proposed levee improvement strategy for the CHP Academy site.

Alternatives 2 and 3 appear to be the least favorable alternatives. Both of these alternatives require the installation of a seepage and/or stability berm. In most cases, berms require some amount of additional real estate to implement. The acquisition of additional real estate often results in increased projects costs as well as additional environmental impacts associated with the removal of vegetation and other habitat. For Alternative 2, the considerable amount of additional real estate required would affect the functionality of the CHP Academy located immediately adjacent to this reach of levee, and for this reason the alternative is not carried forward. For Alternative 3, the installation of relief wells would require water quality permitting, increased operation and maintenance costs, and has the potential to impact operations of the pump station located near the site.

Based on the screening process, two of the alternatives were developed for the CHP Academy EIP to be carried forward for study in the EIS/EIR. Table 4-2 provides detail for the levee stationing and treatments proposed for each alternative. The alternatives (in addition to no action) are identified below.

- **CHP Academy Applicant Preferred Alternative (APA).** The installation of a slurry cutoff wall combined with slope flattening (Alternative 1, above).
- **CHP Academy Alternative B.** The construction of a seepage berm with an interior drain combined with relief wells (Alternative 3, above).

The proposed recreation program improvements are the same for both the CHP Academy APA and CHP Academy Alternative B. Chapter 4 of this EIS/EIR includes an analysis of the effects of the CHP Academy APA, CHP Academy Alternative B, and the No Action Alternative. A detailed description of both the flood program and recreation program improvements follows the alternative screening discussion.

Table 4-2. CHP Academy EIP Flood Improvement Alternatives

EIP	Station Ranges		Deficiencies	APA Levee Treatments	Alt B Levee Treatments
CHP Academy EIP (2+20 to 64+78)	2+20	18+00	Geometry	Waterside slope flattening	Stability berm with interior drain and relief wells
	18+00	60+00	Through-seepage, under-seepage, stability, geometry	Slurry cutoff wall and waterside slope flattening	Stability berm with interior drain and relief wells
	60+00	64+78	Through-seepage, stability, geometry	Slurry cutoff wall and waterside slope flattening to weir	Stability berm with interior drain and relief wells

Source: Bourgeois pers. comm.

4.3.1.3 No Action Alternative

Under the No Action Alternative, no flood or recreation improvements would be implemented at the CHP Academy site, West Sacramento would remain at flood risk, USACE levee vegetation guidance would be complied with, and current flood O&M activities would continue. A more complete discussion of no action as it applies to the WSLIP and this EIS/EIR is described in Section 2.4, with relevant detail provided below for the project-level analysis. Refer to Section 2.4 for discussion about the definition of no action, possibility of future Federal or state action, relationship of flood map modernization to no action, and USACE levee vegetation policy relative to no action.

4.3.1.3.1 Consequences of Levee Failure

Assuming that no levee repair or strengthening would occur under the No Action Alternative means that the Sacramento Bypass levee would remain or become more susceptible to failure as a result of identified deficiencies of seepage, geometry, and slope instability. As stated previously, evidence of seepage has been present at this site during high-water events. These conditions could cause portions of the levee to fail, triggering widespread flooding, extensive damage to the city's existing residential, commercial, agricultural, and industrial structures, and potential loss of life and property. Extensive damage to utilities, roadways, major interstate transportation corridors, and other infrastructure systems would also likely occur.

The magnitude of the flood damage would depend upon the nature of the levee failure, severity of the storm, and river flows at the time of a potential levee failure. A failure of this levee would first flood the CHP Academy site, and then overland flow would inundate the established residential communities of Bryte and Broderick, flood of the commercial core of West Sacramento, and ultimately could inundate the Southport area. The elevations are higher in the north sector of the city, meaning the land surface generally falls from the north and east toward the south and west.

Therefore, a breach at this location could flood the entire city as the north basin would fill followed by the south basin.

Flood depth maps prepared for West Sacramento indicate that under a 100-year flood event scenario, inundation levels would range from 1 foot to 10 feet in the north basin, with most in the range of 1 to 5 feet, about 20% from 5 to 10 feet, and less than 10% less than 1 foot. Figure 2-1 shows the ultimate estimated inundation depths for a 100-year flood event.

In 2006, two hypothetical levee failures were analyzed for West Sacramento utilizing 100-year water surface elevations and hydrology. This analysis was performed to assist the City in its flood emergency preparedness planning. One failure was located in the northern part of the city, on the Sacramento River North Levee, and these results are reasonably representative of the CHP Academy site (failure locations are shown in Figures 2-2 and 2-3). (Wood Rodgers 2006.)

The analysis indicates that a levee failure on the Sacramento River North Levee during a 100-year event would flood the entire north area with at least 1foot of water within 24 hours, at which point vehicular evacuation would become severely limited (a depth of 1 foot is regarded as impassable from the standpoint of vehicular traffic). Certain neighborhoods close to the levee failure would lose access to evacuation routes within three hours of levee failure. Figure 2-2 shows the estimated time to 1-foot inundation depths throughout the northern area. Within3 days, floodwater depths would reach 3to 10 feet, depending on land surface elevation (as shown in Figure 2-1). Floodwaters would flow from north to south, seeking the lowest topographical elevation, and eventually discharge into the DWSC. The study estimates that floodwaters would begin to spill into the DWSC less than 24 hours after the breach. Modeling indicates that the DWSC could absorb up to 20,000 cubic feet per second (cfs) in discharge flow from waters flooding the north area of the city before overtopping and flooding the Southport area. (Wood Rodgers 2006.)

Levee failure and subsequent flooding of the city of West Sacramento would affect the entire city, jeopardizing lives, and would cause substantial damage to structures, contents, and other property such as landscaping and automobiles. As of 2005, a population of 40,439 was living in 15,448 housing units within the city (Sacramento Area Council of Governments 2008a and 2008b). All of these residents could be displaced by a catastrophic flood event. Additionally, the city is home to 30,655 jobs (Sacramento Area Council of Governments 2008c), 734 commercial and industrial structures, 46 public structures and 27 park facilities, which would all be affected by a flood event (HDR Engineering 2009). Environmental and agricultural resources could also sustain major damage in a flood event; 22.6% of the land area within the city is either farmland or open space (City of West Sacramento 2009). If a catastrophic flood event occurred resulting in inundation up to 15 feet, land damages are estimated to be $237,763,648 and structural damages could be up to $1,750,118,102 (PB 2007). These values are based on the 100-year event.

A flood event could cause severe public health hazards as well. Flooding in the city could upset and spread stored hazardous materials, creating hazardous conditions for the public and the environment. Flood damage to homes and other structures could render them dangerous, due to structural damage as well as contamination. Additionally, the floodwaters and ponds left behind could provide a wide breeding ground for mosquitoes and other disease vectors. Effects to the water supply system could be particularly severe in a flood event, and could leave residents and businesses without a reliable water supply for a significant amount of time, as a single break in a water delivery pipe or main could contaminate the entire city's water supply. A major flood event

could also result in substantial stress or disruption to the region's emergency response capacity, hospital services, and other critical lifelines of West Sacramento.

During the recovery period after a flood event, West Sacramento residents would require temporary housing, and displacement of many or all occupants would occur while levees, buildings, and other infrastructure were repaired. Businesses, social services, and other employers occupying affected structures would be forced to relocate. The potential number of displaced residents (over 40,000) and businesses (over 30,000 jobs) is so large that the demand for temporary quarters would likely exceed the available supply of vacant buildings surrounding the West Sacramento area. Thus, many displaced residents and businesses may be forced to relocate to areas a considerable distance from West Sacramento, resulting in substantial intermediate-term and long-term economic impacts on the West Sacramento area and its people. These impacts include changes in employment numbers and patterns, business and personal incomes, tax revenues, and regional economic activity.

A flood event in West Sacramento would also disrupt state and interstate highway, rail, and shipping traffic, causing long-term effects on the region's and the state's economy and ability to move people and goods. West Sacramento has one of the most comprehensive transportation networks on the west coast. Its central geographic location and extensive north-south and east-west highway access has made it a major distribution center. High volumes of truck and passenger traffic pass through the city on Interstate 80 and US 50/Business 80 every day, with truck traffic transporting approximately $63 billion worth of cargo annually through West Sacramento (HDR Engineering 2009). Major transcontinental rail lines passing through the city provide commercial and passenger rail service to all parts of the nation, and the Port of West Sacramento runs domestic and international shipping services (City of West Sacramento 2009). Approximately 9.3 million tons of rail freight valued at approximately $5 billion travels through West Sacramento annually (HDR Engineering 2009). Flooding of this transportation and distribution infrastructure would cut off major statewide and interstate transportation corridors.

Examples of critical facilities for government and commerce in West Sacramento that would be affected by a flood event are the CHP Academy, regional distribution centers for the U.S. Postal Service and United Parcel Service, Raley Field, offices for the California Department of General Services and California State Teachers' Retirement System, the Port of West Sacramento, wastewater treatment facilities, Interstate 80, US 50, and numerous other government and commercial buildings and infrastructure.

4.3.1.4 CHP Academy Flood Improvement Alternatives

4.3.1.4.1 CHP Academy Applicant Preferred Alternative—Slurry Cutoff Wall and Waterside Slope Flattening

The CHP Academy APA consists of a combination of a slurry cutoff wall and slope flattening. To address under- and through-seepage concerns, a slurry cutoff wall varying in depths from 25 to 80 feet deep below the degrade elevation is proposed. The slope flattening treatment is proposed to alleviate geometry deficiencies. The waterside slope would be flattened to a 2.5:1 slope shifting the levee prism 10 to 20 feet landward (pending USACE approval based on engineering analysis to support a slope steeper than 3:1). Improvements constructed on the landside of the levee may consist of reconstructing the landside stability berm, interior drain and toe drain system. All alternatives would occur within the construction limits which are bounded on the landside by the CHP Academy property fence. The 1,200 linear feet of concrete cap on the waterside slope adjacent

to the weir would be demolished and removed before slurry cutoff wall and slope flattening construction and replaced after construction is complete. The staging area for equipment is an approximate 6.50-acre area within the bypass and adjacent to the levee. The southern boundary of the construction limit of work is the CHP Academy fence line; therefore, the CHP Academy property would not be affected by construction for the CHP Academy APA. The levee treatments and phases of construction are described in more detail below. The phase of construction, necessary equipment, and estimated duration for each phase are presented at the end of the discussion in Table 4-3.

Treatments

Slurry Cutoff Wall

An 80-foot-deep by 3-foot-wide slurry cutoff wall is proposed to be constructed from station 18+00 to station 52+00 and a 25-foot-deep by 3-foot-wide slurry cutoff wall is proposed to be constructed from station 52+00 to station 61+75 (Figure 4-1). The levee would be degraded and then the conventional slot trench method would be used to construct the wall. During slurry cutoff wall construction, one crew would be able to construct approximately 40 to 50 linear feet of slurry cutoff wall in an 8-hour shift. Mixing areas would be located at the staging area. The mixing area would be used to prepare the soil-bentonite mixture and supply bentonite-water slurry. The mixing area would be contained by installing erosion control materials in accordance with the Stormwater Pollution Prevention Plan (SWPPP) to avoid dispersal of inadvertently spilled mixing materials. Vertical clearance of about 40 feet would be needed for the excavator boom. Horizontal clearance of about 30 feet beyond the levee crest may be required for excavator swing when loading dump trucks. Dump truck trips would haul material between the excavator and the mixing area along the levee.

Slope Flattening

To flatten the waterside slope, the waterside slope would be trimmed and reshaped to a 2.5:1 slope the full length of the site. After slope flattening, the levee crown would be a minimum of 20 feet wide, and the levee prism would shift 10 to 20 feet landward. The existing waterside hingepoint would move landward and the waterside toe would remain in the same place. On the landside, an interior drain and sub-surface drainage canal presently run the length of the Sacramento Bypass Levee. The drainage canal runs along the landside berm toe and captures water that daylights from an existing interior drain. This drainage canal flows to the westernmost end of the Sacramento Bypass Levee to a pump station that pumps the water over the levee into the bypass. Improvements constructed on the landside of the levee may consist of reconstructing the landside stability berm, interior drain, and toe drain system. All alternatives would occur within the construction limits which are bounded on the landside by the CHP Academy property fence. No permanent fill of wetlands or waters of the United States is proposed. Embankment fill material excavated to flatten the slope would be transported to the staging area and, if suitable, reused.

Construction Details

Construction Staging

As depicted on Figure 4-1, an approximate 6.50-acre area within the bypass would be used for staging construction activities and provide space to house construction equipment and materials before and during construction activities. There is an existing elderberry shrub 20 feet from the

staging area. Staging activities would be restricted to a minimum of 20 feet away from the shrub and the shrub would not be disturbed by construction or staging activities.

Temporary Facilities and Access Provisions

To facilitate project construction, earthen ramps would be constructed to allow equipment in the bypass to facilitate access between the levee crown and staging area. The earthen ramps would be removed when construction is complete.

Protection of Biological Resources

WSAFCA representatives met with representatives of USFWS and CDFG at the CHP Academy EIP site in December 2009 to discuss acceptable measures for the protection of special status species. During this coordination meeting, measures to protect VELB, giant garter snake, and Swainson's hawk, were agreed upon and are included as part of the CHP Academy EIP. Those measures include protective K-rail fencing, orange construction fencing, exclusion fencing, and on-site biological monitors (Figure 4-2). See the Vegetation and Wetlands and Wildlife sections (4.10 and 4.12) for descriptions of land cover types where these species may exist and of the potential effects of this project on these species. Protective measures that will be implemented as part of the CHP Academy EIP for each of the species are as follows:

Valley Elderberry Longhorn Beetle

Two elderberry shrubs occur in the study area. One elderberry shrub (EB 146) occurs in the northwestern area of the project site within the Sacramento Bypass, adjacent to an existing maintenance road (approximately 30 feet wide) used for levee maintenance and patrolling activities. Grading activities are proposed to occur down the levee slope to the toe of the levee, approximately 30 feet from the shrub. Hauling activities may occur adjacent to the shrub, but outside the dripline. The other shrub (EB 177) is in the southeast corner of the project area approximately 15 feet from the proposed construction limits, beneath a large oak tree. Neither shrub is expected to be removed or disturbed. Elderberry shrub survey results are shown in Section 4.10, Wildlife, Table 4.12-3, and the locations of these shrubs are shown in Section 4.10, Wildlife, Figure 4.12-1.

The following measures will be implemented as part of the CHP Academy EIP to avoid and minimize effects on VELB:

- Before ground disturbance, all construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the life history of VELB and the importance of its host shrub, the elderberry. Proof of this instruction will be submitted to the USFWS.
- For shrub EB 146, 100 feet of concrete barriers (K-rails) will be installed along the maintenance road in front of the shrub (50 feet west and 50 feet east of the shrub). Beyond the concrete barrier, temporary orange construction fencing (4-foot-high commercial- quality woven polypropylene) will be installed to completely surround the shrub and form a 20-foot construction buffer on the north, east, and west sides of the shrub. For shrub EB 177, a 20-foot temporary orange construction fence buffer will be installed around the shrub and any adjacent vegetation that requires protection (see Figure 4-2). Within buffer areas, signs will be posted along fencing for the duration of construction. The signs will contain the following information:

This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.

- Buffer area fences around elderberry shrubs/clusters will be inspected weekly by a qualified biologist during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs throughout construction. Biological inspection reports will be provided to the project lead and USFWS.
- WSAFCA will ensure that the project site will be watered down as necessary to prevent dust from becoming airborne and accumulating on elderberry shrubs in and adjacent to a project site.

Giant Garter Snake

Giant garter snakes have the potential to use aquatic habitat in the study area, including depressional wetland and open water areas. Upland areas adjacent to these aquatic habitats could also be used by giant garter snakes for basking, cover, and refuge areas.

WSAFCA will implement the following measures to avoid and minimize effects on giant garter snake and their habitat:

- Before ground disturbance, all construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the life history of giant garter snakes and the importance of both aquatic and upland habitat areas. Proof of this instruction will be submitted to the USFWS.
- To reduce the likelihood of snakes entering these areas during construction activities, WSAFCA has agreed to install exclusion fencing along the depressional wetland and open water areas (areas within 200 feet of suitable habitat) (see Figure 4-2). The exclusion fencing will be installed during the active period for giant garter snakes (May 1 to October 1) to reduce the potential for direct loss of the species during this activity. The fencing will consist of 3- to 4-foot-tall erosion fencing buried at least 6 to 8 inches below ground level. The fencing will ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout construction. To ensure that construction equipment and personnel do not affect aquatic habitat for giant garter snake outside the construction corridor, a combination of K-rail fencing and orange barrier fencing will be erected (in addition to the exclusion fencing) to clearly define the aquatic habitat to be avoided.
- A USFWS-approved biologist will conduct a preconstruction survey in suitable habitat no more than 24 hours before construction. Prior to construction each morning, the biologist will survey for the presence of any giant garter snakes and inspect exclusion and orange barrier fencing to ensure they are both in good working order. The project area will be re-inspected whenever a lapse in construction activity of 2 weeks or more has occurred. If a snake is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed.



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0 250 500 1,000 Feet

Figure 4-2
CHP Academy EIP
Protection Fencing Map

- Vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat will be limited to the minimum area necessary. Avoided giant garter snake habitat within or adjacent to the project area will be flagged and designated as an environmentally sensitive area, to be avoided by all construction personnel.
- The movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat will be confined to designated haul routes to minimize habitat disturbance.

Swainson's Hawk

Swainson's hawks are known to nest in and adjacent to the study area, and project construction within this reach could affect Swainson's hawk, either directly or through habitat modification.

To avoid and minimize effects on Swainson's hawk, WSAFCA representatives coordinated with DFG representatives during a field visit in December 2009, and agreed to implement the following measures as part of the CHP Academy EIP:

- Before ground disturbance, all construction personnel will participate in a CDFG-approved worker environmental awareness program. A qualified biologist will inform all construction personnel about the life history of Swainson's hawk and the importance of nest sites and foraging habitat.
- A breeding season survey for nesting birds will be conducted for all trees and shrubs that will be removed or disturbed which are located within 500 feet (0.5 mile for Swainson's hawk) of construction activities, including grading. Swainson's hawk surveys will be completed during at least two of the following survey periods; January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30 with no fewer than three surveys completed in at least two survey periods, and with at least one of these surveys occurring immediately prior to project initiation (Swainson's Hawk Technical Advisory Committee 2000). Other migratory bird nest surveys can be conducted concurrent with Swainson's hawk surveys with at least one survey to be conducted no more than 48 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, can commence.
- If active nests are found, WSAFCA will maintain a 0.25-mile buffer between construction activities and the active nest(s). In addition, a qualified biologist will be present on-site during construction activities to ensure the buffer distance is adequate and the birds are not showing any signs of stress. If signs of stress that may cause nest abandonment are noted, construction activities will cease until a qualified biologist determines that fledglings have left an active nest.

Demolition and Vegetation Removal

Demolition and vegetation removal would be performed for levee improvement construction and to comply with USACE vegetation guidance and CVFPB encroachment regulations requiring a vegetation-free zone. Vegetation clearing activities would consist of removing the larger woody vegetation such as trees and shrubs. Grubbing activities consist of removing roots and stripping activities consist of excavating approximately one foot of organic material from the levee surface. A stand of trees on the waterside of the levee (in the bypass), approximately 20 feet from the levee toe, would be pruned for construction equipment clearance. Demolition activities include demolition and removal of the 1,200-linear-foot-long concrete liner along the waterside slope of the levee

(adjacent to the weir). The concrete debris would be hauled off site to an appropriate disposal location within 20 miles of the site.

Levee Degradation

Prior to slurry wall and slope flattening construction, approximately two-thirds of the levee crown would be degraded to provide a 60- to 80-foot working platform. Approximately 89,000 cubic yards would be degraded or excavated and hauled from the project site and disposed of at a permitted site within 20 miles of the project site. Following completion of the slurry cutoff wall, approximately 79,600 cubic yards of suitable levee construction embankment fill material may be transported from a permitted source approximately 10 miles away from the project site to restore the levee crown to its original elevation.

Note: Concurrent with the writing of this EIS/EIR, DWR was undertaking a sediment cleanout project of the Sacramento Bypass. The spoils from the sediment cleanout project are to be cast onto the landside berm of the CHP Academy EIP site. The spoils would be removed as part of the CHP Academy EIP to construct the necessary improvements and reused on site as berm material or to increase the overall levee prism. While the final quantities are not known, the material-handling operations are considered consistent with the type and magnitude of effects as described for the CHP Academy EIP; and, therefore, do not modify the findings or mitigation required.

Materials Reuse and Importation

Materials imported to the project site would include water, bentonite, cement, incidental construction support materials, aggregate base rock, hydroseed, and about 79,600 cubic yards of embankment fill material to replace poor levee material. Embankment fill material excavated to construct levee improvements would be evaluated for reuse. Embankment fill material deemed suitable for reuse would be used to rebuild the levee. Embankment fill material of poor quality would be hauled off site to a permitted disposal site within 20 miles of the project site.

Post-Construction Operation and Maintenance

The only permanent facility associated with the project would be the new levee footprint itself. After construction completion, the levee and staging areas and levee slopes would be hydroseeded for erosion protection and to prevent colonization of exotic vegetation. Access roads adjacent to the levee would be restored to preexisting conditions.

Typical O&M activities (as described under the Program Description) would include the following actions:

- vegetation maintenance up to four times a year by mowing or applying herbicide;
- slope reconditioning up to once a year by dozing and track-walking the levee slopes;
- patrol road reconditioning up to once a year by placing, spreading, grading, and compacting aggregate base or substrate; and
- visual inspection as needed by driving on and observing from the patrol road.

Construction Schedule

The CHP Academy APA would be constructed during the 2011 construction season (typically April 15 to November 1). The project is expected to be completed within 130 days. Table 4-3 shows specific durations and equipment required for each phase of construction.

Constraints, which may include contract award delays due to permitting, early or late season rain, the presence of nesting raptors, and equipment shortages, have the potential to suspend the construction of the project before the start of the flood season (November 1) in 2011. The CHP Academy APA construction contract would allow the contractor to construct on a 24-hours-per-day/7-days-per-week (24/7) work schedule to complete the construction of the improvements before the flood season in order to manage the risk of delay due to the constraints described above. The construction schedule described in the section below lists both the standard 10-hour-per-day/5-days-per-week work schedule and the 24/7 condensed work schedule. Either of these schedules may be used for the project.

Table 4-3. CHP Academy APA: Construction Schedule Options

Phase of Flood Improvements Construction	Required Equipment	Standard Duration (Days)	24/7 Duration (Days)
Mobilization	N/A	1	0.4
Clearing and grubbing	A bulldozer, dump trucks, and an excavator	9	3.75
Concrete removal	A loader, dump trucks, and excavators	7	3
Levee degrade	A bulldozer, dump trucks, and an excavator	26	11
Slope flattening	A bulldozer, dump trucks, and an excavator	5	2
Slurry wall construction	Bulldozers, a long reach track hoe, a loader, and rough terrain forklift, 3-4 dump trucks, excavator, compactor, maintainer and water truck	29	12
Embankment fill placement	Bulldozers, dump trucks, an excavator, a compactor, a maintainer, and a water truck	27	11.25
Concrete placement	Concrete trucks and a crane	24	10
Roadway reconstruction	Dump trucks, a skip loader, a blade, a sheepsfoot compactor, a distributor, an asphalt paver, a pneumatic compactor, and a roller compactor	2	.8
Demobilization	N/A	2	0.8
Total Days:		**130**	**55**

Source: Bourgeois pers. comm.

4.3.1.4.2 CHP Academy Alternative B—Stability Berm, Interior Drain, and Relief Wells

The treatments proposed under Alternative B at the CHP Academy EIP (CHP Academy Alternative B) consist of the construction of an interior drain within the levee, a stability berm on the landside of the levee, and the installation of relief wells (Figure 4-1). The interior drain and relief wells would alleviate seepage, and the stability berm would address geometry deficiencies. The first 1,200 linear feet of concrete cap on the waterside slope adjacent to the weir would be demolished, removed, and hauled off site for disposal before construction and replaced after construction. The staging area for

equipment would be located in an approximately 6.5-acre area adjacent to the Sacramento Bypass Levee within the bypass. The southern boundary of the construction limit of work is the CHP Academy fence line; therefore, the CHP Academy property would not be affected by construction for the CHP Academy APA. The treatments and phases of construction are described in more detail below. The phase of construction, equipment necessary and estimated duration for each phase are presented at the end of the discussion in Table 4-4.

Treatments

Stability Berm and Interior Drain

A reinforced stability berm would replace the existing landside stability berm. The existing stability berm would be excavated the entire length of the reach within the project area. Approximately 11,000 cubic yards would be degraded and hauled from the project site and disposed of at a permitted site within 20 miles of the project. Construction of the interior drain would occur after excavation and removal of the existing stability berm. A 1.5-foot-thick base layer of drain rock would be placed at the levee toe, extending roughly 15 feet into the levee foundation. An additional drain layer, approximately 1.5 feet thick, would extend upward and into the core of the levee at a 2:1 slope from the end of the base layer to the approximate elevation of the design flood. A layer of geotextile material would then be placed over the additional drain layer and imported embankment fill material would be placed on top of the drain layer to rebuild the levee.

After completion of the interior drain, the stability berm would be rebuilt. The height of the stability berm would be two-thirds the height of the levee and extend the entire length of the project site. Dump trucks would transport 7,000 cubic yards of embankment fill material to the stability berm site. Motor graders would spread the material evenly and a sheepsfoot roller would compact the material. The footprint of the new stability berm would be the same as the existing landside stability berm.

Currently, a drainage canal runs along the landside berm toe and captures water that daylights from an existing interior drain. This drainage canal flows to the westernmost end of the Sacramento Bypass Levee to a pump station that pumps the water over the levee into the bypass. This drainage canal may be temporarily affected by construction but would be rebuilt to its original specification after interior drain installation. The drainage canal would continue to capture seeping water and direct it to the pump station.

Relief Wells

After the construction of the stability berm and interior drain, relief wells would be constructed 15 feet from the berm toe. Relief wells would be used to address under-seepage.

Approximately 20 to 40 relief wells would be constructed using soil-boring equipment to drill a hole vertically through the fine-grained blanket layer (sand) into the coarse-grained aquifer layer (gravel) beneath. Pipe casings and gravel/sand filters would be installed to allow water to freely flow to the ground surface, relieving the pressure beneath the clay blanket without transporting fine materials to the surface, which can undermine the levee foundation. The water would collect in a v-ditch and flow to the existing drainage ditch to be pumped back into the bypass by the existing pump station at the westernmost end of the Sacramento Bypass Levee.

Relief wells would be spaced in 50- to 100-foot intervals, dependent upon the amount of under-seepage, and extend to depths of 100 to 120 feet. Areas for relief well construction would be cleared,

grubbed, and stripped. During relief well construction, a typical well-drilling rig is used to drill to the required depth and construct the well (including well casing, gravel pack material, and well seal) beneath the ground surface. The drill rig likely would be an all-terrain, track-mounted rig that could access the well locations from the levee toe.

Construction Details

Construction Staging

As depicted on Figure 4-1, an approximately 6.5 -acre area within the bypass would be used for staging construction activities and to provide space to house construction equipment and materials before and during construction activities. There is an existing elderberry shrub 20 feet from the staging area. Staging and construction activities would remain 20 feet away from the elderberry shrub and it would not be disturbed by construction or staging activities.

Temporary Facilities and Access Provisions

To facilitate project construction, earthen ramps would be constructed to allow equipment in the bypass to facilitate access between the levee crown and staging area. The earthen ramps would be removed when construction is complete.

Demolition and Vegetation Removal

Demolition and vegetation removal would be performed for levee improvement construction and to comply with USACE vegetation guidance and CVFPB encroachment regulations requiring a vegetation-free zone. Clearing activities would consist of removing the larger vegetation such as trees and shrubs. Grubbing activities would consist of removing roots and stripping activities would consist of excavating approximately a foot of organic material from the levee surface. A stand of trees on the waterside of the levee, approximately 20 feet from the levee toe, would be pruned for construction access. This phase of construction would also include demolition and removal of the 1,200-linear-foot-long concrete liner along the waterside slope of the levee adjacent to the weir. The concrete debris would be hauled off site to an appropriate disposal location.

Materials Reuse and Importation

Materials imported to the project site would include water, drain rock, geotextile material, aggregate base rock, well casing, sand and gravel, concrete, a drain pipe, hydroseed, and about 7,000 cubic yards of embankment fill material to replace poor levee material. Embankment fill material excavated to construct levee improvements would be evaluated to determine if it is suitable for reuse. Any of the embankment fill material deemed suitable for reuse would be used to rebuild the levee. Embankment fill material of poor quality would be hauled to a permitted disposal site.

Note: Concurrent with the writing of this EIS/EIR, DWR was undertaking a sediment cleanout project of the Sacramento Bypass. The spoils from the sediment cleanout project are to be cast onto the landside berm of the CHP Academy EIP site. The spoils would be removed as part of the CHP Academy EIP to construct the necessary improvements and reused on site as berm material or to increase the overall levee prism. While the final quantities are not known, the material-handling operations are considered consistent with the type and magnitude of effects as described for the CHP Academy EIP; and, therefore, do not modify the findings or mitigation required.

Post-Construction Operation and Maintenance

After construction of the seepage berm, interior drain, and relief wells, the staging areas and levee slopes would be hydroseeded for erosion protection and to prevent colonization of exotic vegetation. Access roads adjacent to the levee would be restored to preexisting conditions.

The interior drain, stability berm, and relief wells and associated lateral drains would be the permanent facilities resulting from the project. Inspection of the relief wells would be required at least annually, and observation of flow from the wells would be required during high river stages. The wells would be test-pumped every 2 years, and the discharge water from those tests would be trucked off site to a central disposal, if necessary. The drainage ditch would be maintained to allow free flow of water. Piezometers, also called monitoring wells, would be installed between each relief well to allow monitoring of groundwater levels to ensure the wells are relieving the pressure within the aquifer.

Construction Schedule

The goal of the project is to complete the CHP Academy Alternative B in 2011. The project is expected to be completed within 67 days. All flood improvement construction and staging would take place during the typical construction season (April 15 to November 1). Table 4-4 shows specific durations and equipment required for each phase of construction.

Constraints, which may include contract award delays due to permitting, early or late season rain, the presence of nesting raptors, and equipment shortages, have the potential to suspend the construction of the project before the start of the flood season (November 1) in 2011. The CHP Academy Alternative B construction contract would allow the contractor to construct on a 24-hours-per-day/7-days-per-week (24/7) work schedule to complete the construction of the improvements before the flood season in order to manage the risk of delay due to the constraints described above. The construction schedule described in the section below lists both the standard 10-hour-per-day/5-days-per-week work schedule and the 24/7 condensed work schedule. Either of these schedules may be used for the project.

Table 4-4. CHP Academy Alternative B: Construction Schedule Options

Phase of Flood Improvements Construction	Required Equipment	Standard Duration (Days)	24/7 Duration (Days)
Mobilization	N/A	2	0.8
Clearing and grubbing	A bulldozer, dump trucks, and an excavator	4	1.6
Excavate stability berm	A loader, dump trucks, and excavators	5	2
Install stability berm and interior drain system	Bulldozers, dump trucks, an excavator, a sheep foot compactor, a maintainer, and a water truck	31	13
Install relief wells	Drill rig and crane	22	9
Roadway reconstruction	Dump trucks, a skip loader, a blade, a sheepsfoot compactor, a distributor, an asphalt paver, a pneumatic compactor, and a roller compactor	2	.8
Demobilization	N/A	3	1.25
Total Days:		**67**	**29**

Source: Bourgeois pers. comm.

4.3.1.5 CHP Academy Recreation Improvements

The CHP Academy recreation improvements would consist of a paved trail on the levee crown the entire length of the site (6,500 feet). The paved trail would be designed in compliance with USACE and CVFPB standards. Details of the recreation program improvement components are described below.

4.3.1.5.1 Paved Bike Trail

- The trail alignment is proposed atop the existing aggregate base access roads currently used for flood control maintenance and operations (Figure 4-1).
- The paved bike trail would be approximately 12 feet wide with a 2-foot-wide compacted aggregate base shoulder on either side of the trail to match the grade. Asphalt within the 12-foot-wide section would be 2 to 8 inches thick with a 4- to 8-inch-thick base.

4.3.1.5.2 Access and Signage

- Removable access controls (bollards) would be installed at the entrance of the Sacramento Bypass Levee.
- Permanent safety signs would be installed at select trail access points and at periodic intervals along the trails to inform users that the trail serves as a levee maintenance road and to instruct them to watch for patrolling vehicles. These signs would also inform users that portions of the trail are subject to flooding and that trail damage and related safety hazards could occur during the flooding season.

4.3.1.5.3 Construction Details

Construction staging and parking would be limited to areas that been selected for construction staging for the flood improvements. All recreation improvement construction and staging would

take place during the typical construction season (April 15 to November 1). Construction of the bicycle/pedestrian trails would consist of compacting, paving, and striping the existing graded levee top. Recreation improvement construction is expected to be completed within 25 days.

Grasses and other native vegetation approved by USACE and CVFPB would be planted after project construction to stabilize soils and reduce runoff from temporary disturbance areas.

Table 4-5 lists the types of construction equipment that may be used to construct the recreation improvements of the CHP Academy EIP.

Table 4-5. CHP Academy EIP Recreation Improvements

Phase of Recreation Improvement Construction	Required Equipment	Standard Duration (Days)
Mobilization	N/A	2
Grading	Scraper, wheel loader, motor grader, dump truck, steel wheel loader, and water truck	8
Install pathways and signs	Dump truck, asphalt paver, asphalt sealer, striping truck, small front loader, skid steer loader and small roller	12
Demobilization	N/A	3
Total Days:		**25**

4.3.1.5.4 Operation and Maintenance

The bikeway and all related facilities would be maintained by the City. The City would be responsible for checking trails and conducting trail repairs at the end of the flood season and as needed. Maintenance of the bike trail would include sweeping, pavement repair, removal of obstacles, mowing and trimming, periodic asphalt overlays, and repair of associated facilities. Environmental commitments for levee improvements at this EIP site, as well as for the entire WSLIP program, are discussed in detail in Section 2.9 of this EIS/EIR.

4.3.2 Environmental Commitments

As presented in Chapter 2, environmental commitments are measures incorporated as part of the project description, meaning they are proposed as elements of the proposed action and are to be considered in conducting the environmental analysis and determining effects and findings. To avoid and minimize construction-related effects, WSAFCA would implement the following environmental commitments at the program and project levels to reduce or offset short-term, construction-related effects. Measures have been developed for each of the topics below, to be applied in the program- and project-level resource analyses.

- Raptors
- USACE Levee Vegetation Guidance
- Protected Trees and Riparian Trees
- Avoid and Minimize the Spread or Introduction of Invasive Plant Species
- Stormwater Pollution Prevention Plan

- Temporary Visual Barriers between Construction Zones and Residences
- Noise-Reducing Construction Practices
- Temporary Resident Relocation, Property Acquisition, and Compensation for Loss of Business
- Traffic Control and Road Maintenance Plan
- Coordination to Ensure Minimal Overlap in Disturbance to Traffic during WSLIP Construction
- Coordination of Construction Periods with Railroad Service Officials
- Coordination of Construction Periods with CHP
- Notification of Construction Area Closure
- Minimization of Construction-Related Effects on Navigation
- Bentonite Slurry Spill Contingency Plan
- Spill Prevention, Control, and Counter-Measure Plan
- Implementation of Measures to Maintain Surface Water Quality and Groundwater Quality
- Monitoring of Turbidity in Adjacent Water Bodies
- Soil Supply Protection Measures

Section 4.4

Flood Control and Geomorphic Conditions—CHP Academy Early Implementation Project

4.4.1 Affected Environment

This section describes the affected environment for hydrologic, hydraulic, geomorphic, and flood control issues in the CHP Academy EIP project area, including regulatory and environmental setting.

4.4.1.1 Regulatory Setting

4.4.1.1.1 Federal

The following Federal policies related to hydrologic, hydraulic, geomorphic, and flood control issues may apply to implementation of the CHP Academy EIP. Please see Section 3.2.3.3, Regulatory Setting, for a more complete description of each policy.

- National Flood Insurance Program
- U.S. Army Corps of Engineers Levee Design Criteria
- Executive Order 11988 (Floodplain Management)
- Section 401 of the Clean Water Act and State Regulations in Title 23 California Code of Regulations
- Code of Federal Regulations, Title 40, Part 131, Water Quality Standards
- Section 408
- Public Law 84-99 Delta Specific Standard

4.4.1.1.2 State

The following state policies related to hydrologic, hydraulic, geomorphic, and flood control issues may apply to implementation of the CHP Academy EIP. Please see Section 3.2.3.3, Regulatory Setting, for a more complete description of each policy.

- Central Valley Flood Protection Board
- Delta Protection Act of 1992
- Safe, Clean, Reliable Water Supply Act

4.4.1.1.3 Local

The following local policies and agencies related to hydrologic, hydraulic, geomorphic, and flood control issues may apply to implementation of the CHP Academy EIP. Please see Section 3.2.3.3, Regulatory Setting, for a more complete description of each policy.

- *Health and Safety Element of the Draft 2030 Countywide General Plan for Yolo County*

- *Health and Safety Section of the City of West Sacramento General Plan, Policy Document* (City of West Sacramento 1990)
- West Sacramento Area Flood Control Agency

4.4.1.2 Environmental Setting

This site incorporates the entire 6,500 feet of the southern Sacramento Bypass Levee. The CHP Academy EIP site exhibits through-seepage and geometry deficiencies. Under-seepage and stability deficiencies are also present in smaller pockets over the site. This section generally discusses the environmental setting related to hydrologic, hydraulic, geomorphic, and flood control issues in the larger CHP Academy EIP project area (Figure 3.2-1). For more detailed information about this resource, including climate, regional hydrology and geomorphic conditions, levee stability and levee height evaluations, see Section 3.2.2.2, Environmental Setting, of the program analysis.

Yolo and Sacramento Bypass Reaches (Yolo Bypass Levee, Sacramento Bypass Levee, and Deep Water Ship Channel West Levee—Reaches 5, 6, and 9C)

Flows in the Yolo Bypass come from several different sources. Floodflows from Sutter Bypass and the Sacramento River enter the Yolo Bypass over the Fremont Weir when the stage in the Sacramento River reaches 29.7 feet in the National Geodetic Vertical Datum of 1929 (NGVD29). Water also enters the Yolo Bypass from the west side tributaries—Knights Landing Ridge Cut, Cache Creek (Cobble Weir), Willow Slough Bypass, and Putah Creek—and from the Sacramento Weir. The gates of the Sacramento Weir are opened when stages exceed 27.5 feet (NGVD29) at the I Street Bridge: the weir operates infrequently. Various documents describe the relative importance of these sources of floodflows (Yolo Bypass Working Group 2001; Natural Heritage Institute 2003).

DWR has maintained a gage at Lisbon Weir, along the Yolo Bypass Levee, since 1935. Water levels at this gage are tidally influenced and fluctuate between 3 and 7 feet stage (USACE datum) or between 0.5 and 4.5 feet NGVD 29, at low water. Flood stage at the gage is 11.5 feet (9 feet NGVD 29); above this elevation water is no longer contained in the Toe Drain and the Yolo Bypass starts to inundate. The Yolo Bypass floods about 3 out of 5 years, on average, and the annual duration of flooding ranges from zero to 135 days.

The maximum stage recorded at the Lisbon Weir was 24.9 feet NGVD 29 in February 1986. The maximum stage in January 1997, 24.6 feet, was slightly lower than in 1986, but the maxima in these two years are several feet higher than in the other years of record (Jones & Stokes 2006). Water surface elevations in these years were only 2 to 3 feet below the top of the Yolo Bypass levee (U.S. Army Corps of Engineers 2006). Since 1997, USACE has raised levee elevations along the upper portion of the Yolo Bypass Reach and in the Sacramento Bypass by up to 5 feet.

Based on the DWSC West Levee sections in Appendix D of NHC (2007a), a typical elevation for the berm on the Yolo Bypass side of the levee near the Lisbon gage is 15 to 20 feet NGVD 1929. Based on the mean daily water surface elevation duration curve for Lisbon gage in NHC (2007a), stage exceeds this elevation only 2 or 3% of the time, indicating that high water levels that result in wave attack on the levee occur only infrequently.

MBK Engineers provided average cross-sectional velocities in the Yolo Bypass from their UNET model. These velocities varied from 2 to 4 feet/second despite the large cross-sectional area in the bypass. Velocity data at the Lisbon Gage, which is close to the levee, show maximum velocities of about 2.5 feet/second. Velocities vary considerably across the sections and may be higher where

flows accelerate around obstacles, around bends, or where the section narrows. (Northwest Hydraulic Consultants 2007a.)

Yolo and Sacramento Bypass Reaches (Yolo Bypass Levee, Sacramento Bypass Levee, and Deep Water Ship Channel West Levee—Reaches 5, 6, and 9C)

Levee and Bank Geometry

Sacramento and Yolo Bypass Levees (Reaches 5 and 6)

The levees in the Sacramento and Yolo Bypass are part of the original Federal project levee built in the early 20th century. Kleinfelder (2007) indicates that this levee originally was constructed by clamshell dredge with the local flood basin deposits. Table 4.4-1 summarizes construction undertaken to upgrade the levees in the mid-20th century, as shown in The Supplement to Standard Operation and Maintenance Manual for the Sacramento River Flood Control Project Unit No.116, from 1955.

The Yolo and Sacramento Bypass levees also have been upgraded since the 1950s, most recently in 1998 and 1999 by USACE when the levee crests were raised a maximum of 5 feet, damage from the 1997 flood repaired, and rock revetment added for wave and velocity erosion protection (Northwest Hydraulic Consultants Inc. 2007a). The revetment slumped in February 1998 and again at two sites near the Interstate 80 Bridge in January 2006. The revetment failures appear to result from slumping of saturated clays in the levee and foundation materials, resulting in failure of the revetment. Repairs of these failures are underway by DWR (Northwest Hydraulic Consultants Inc. 2007a). Levee soils are assumed to be similar to those along the DWSC West Levee (Kleinfelder 2007)[1].

Table 4.4-1. Historic Construction to Bring Levees Built by Local Interests to Project Standards

Job Order	Date	Location	Description
W-1105-eng-2940	October 1941	East levee of Yolo Bypass, Sacramento Bypass to the Southern Pacific Railroad	Enlargement of the east levee
W-1105-eng-892	March 1932	East levee of Yolo Bypass from S.P.R.R. to the Yolo Causeway	Enlargement of the east levee
W-1105-eng-2927	November 1940	East levee of Yolo Bypass from Yolo Causeway downstream 0.3 mile	East levee reconstructed
W-1105-eng-1294	November 1934	East levee of Yolo Bypass from the Yolo Causeway south to the south boundary of RD 900	Enlargement of the east levee

Source: Northwest Hydraulic Consultants 2007a.

Existing Bank Protection

There is no formal inventory of bank protection works along the Yolo and Sacramento Bypass levees; however, most of both levees are protected by revetment. As discussed above, revetment was placed on the upper end of the Yolo Bypass east levee and the south Sacramento Bypass levee in the late 1990s. Revetment covers about 540 feet around the pump station outlet in the Sacramento

[1] NHC had not received or reviewed a geotechnical data report for these levee sections since submittal of NHC 2007a.

Bypass, consisting of quarry rock with a median size of about 9 inches and a maximum size of 12 inches. The portion of the Sacramento Bypass Levee directly below the Sacramento Weir is lined with concrete.

Structures

An outfall from a pump station is located on the Sacramento Bypass levee at Station 1+50. The outfall is protected with rock riprap, and erosion was not observed the outfall location.

4.4.1.2.2 Levee Deficiencies

Section 4 of HDR, Inc. (2008a) includes the geotechnical assessment of the existing levees with regard to seepage, slope stability, and seismic vulnerabilities[2]. The information provided in HDR, Inc. (2008a) is derived from two reports: *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007), and *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento* Region (URS 2007).

Data collection included 323 borings drilled with standard penetration tests and soundings made using cone penetration test equipment along the levees within the basin. Approximate stationing endpoints have been determined by URS (2007) and Kleinfelder (2007) based on similar soil characteristics within the endpoints. Deficiencies identified within the approximate stationing endpoints do not indicate the entire stretch of levee contains said deficiency; rather, a deficiency has been identified within the endpoints (HDR 2008a).

Levee Seepage Analysis

Engineering analysis evaluating levee seepage along the Sacramento Bypass Levees has been performed by URS (2007), and the findings were presented in their report titled *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007). URS (2007) performed their seepage analysis using water surface elevations that are different from the water surface elevations used in this chapter as determined by MBK Engineers (2007) and assumed a no-flow boundary at the center of the river (HDR 2008a).

Table 4.4-2 shows the seepage summary of the Sacramento Bypass Levees as completed by URS (2007). Exit gradients of 0.5 or greater for under-seepage require mitigation according to the USACE, and areas where through-seepage has been observed or projected based on soil conditions require mitigation.

Kleinfelder (2007) performed the engineering analysis evaluating levee seepage along the Sacramento Bypass Levees and presented their findings in a report titled *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007). Kleinfelder performed their analysis using the water surface elevations determined by MBK Engineers (2007) and assumed a total head boundary at the center of the river.

The seepage summaries for the Sacramento Bypass Levees as completed by Kleinfelder (2007) are shown in Table 4.4-3. Exit gradients of 0.5 or greater for under-seepage require mitigation according

[2] Seismic vulnerabilities are discussed in Chapter 6, Geology, Seismicity, Soils, and Mineral Resources.

to USACE, and areas where through-seepage has been observed or projected based on soil conditions require mitigation.

As described in the program section, the Sacramento River North Levee has a significant amount of under-seepage, whereas the other reaches (including the Sacramento Bypass) have much less extensive under-seepage problems. See Table 3.2-11 and Figure 4 of HDR, Inc. (2008b) for additional information.

Table 4.4-2. Seepage Summary

	Through-seepage		Under-seepage	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Sacramento Bypass Levee				
0+00 to 40+50				
40+50 to 57+50	✓	✓	✓	✓
57+50 to 64+78	✓	✓		

Source: HDR, Inc. 2008a.

Table 4.4-3. Reach Summary

	Seepage, 200-Year Event		Stability, 200-Year Event		
Approximate Stationing	Through Seepage	Under Seepage	Steady State	Rapid Drawdown	Seismic
Sacramento Bypass Levee					
0+00 to 40+50				N	
40+50 to 57+50	X	X	X	N	X
57+50 to 64+78	X		X	N	X

Source: HDR, Inc. 2008b.
N = No Analysis; X = Deficiency; Blank Cell = No Deficiency.

Levee Slope Stability Assessment

URS (2007) completed an engineering evaluation of levee slope stability and the effect of rapid drawdown for the Sacramento Bypass Levee and presented their findings in the report titled *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007). As with the levee seepage analysis described above, URS (2007) used water surface elevations that are different from the water surface elevations determined by MBK Engineers (2007) in their analysis of slope stability[3]. Rapid drawdown calculations have been completed only for the 100-year event as recommended to URS by their Independent Consulting Board (HDR 2008a).

The slope stability results as completed by URS (2007) for the Sacramento Bypass Levees are shown in Table 4.4-4.

[3] Sections of the northern reaches have not been completed to date by URS; these sections will be completed in their final report projected to be issued at a later time.

Kleinfelder (2007) performed the engineering analysis evaluating levee slope stability and the effect of rapid drawdown along the Sacramento Bypass Levees and presented their findings in a report titled *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007). Kleinfelder (2007) performed their analysis using the water surface elevations determined by MBK Engineers (2007).

The slope stability findings as completed by Kleinfelder (2007) are also shown in Table 4.4-4.

In brief, the Sacramento Bypass Levee has significant steady state stability deficiencies. See Table 3.2-11 and Figure 5 of HDR, Inc. (2008b) for additional information.

Table 4.4-4. Slope Stability Summary

	Steady State		Rapid Drawdown	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Sacramento Bypass Levee				
0+00 to 40+50			✓	N
40+50 to 57+50		✓		N
57+50 to 64+78	✓	✓	✓	N

Source: HDR, Inc. 2008a (a compilation of data from URS 2007 and Kleinfelder 2007).

Levee Geometry Evaluation

To evaluate the crown width and side slopes of the levees in the proposed program area, HDR, Inc. (2008a) generated topography data by means of Light Detection and Ranging (LIDAR) using the North American Vertical Datum of 1988 (NAVD 88).

In brief, most of the levees in the proposed program area, including the CHP Academy Site, have a geometry deficiency, and it is typically an over-steepened waterside slope that is the primary problem (HDR 2008b).

USACE requires that levees have a maximum steepness of 3:1 (H:V) waterside slopes and 3:1 (H:V) landside slope. The design criteria for the WSLIP conform with these requirements, unless site-specific conditions permit otherwise (and USACE approval is granted based on engineering analysis to support a slope steeper than 3:1). Crown widths for primary levees are to be a minimum of 20 feet. For the CHP Academy EIP, it is proposed that the waterside slope would be trimmed and reshaped to a 2.5:1 slope the full length of the site (pending USACE approval).

Refer to Appendix B in HDR, Inc. (2008a) for tables identifying sections of the levees that do not meet the design criterion. Appendix D in HDR, Inc. (2008a) contains LIDAR cross sections that have been used to evaluate levee geometry. Also refer to Figure 9 of HDR, Inc. (2008b), which shows the approximate locations where a geometry deficiency has been identified.

For a complete summary of levee deficiencies, refer to Chapter 1, Introduction.

4.4.1.2.3 Flooding

Levees along the Sacramento River and other waterways provide flood control for the city of West Sacramento and conveyance for waters from upstream to the Delta. High winter flows can stress

levees and berms. Longer flood durations can contribute to levee seepage and potentially structural levee failure. Flood water surface elevations also can exceed levee heights and cause overtopping and partially controlled flooding of the protected areas behind the levee. Overtopped levees may maintain structural integrity and would not be considered failed levees. However, the erosive forces that occur during overtopping eventually may cause a structural failure and uncontrolled flooding in the protected areas behind the levee. To maintain the integrity of the flood control system, locations with the potential for failure have been and are being identified and remedied.

MBK Engineers (2007, 2008a, and 2008b) has developed water surface profiles for use in this analysis. Their reports describe and present the results of a hydraulic analysis that was made to determine 1/100 and 1/200 AEP (commonly referred to as 100-year and 200-year) water surface elevations in the surrounding waterways, as well as the potential worst case flood depth for the South Cross Levee. The MBK version of the Comprehensive Study Sacramento River UNET model adopted for the Natomas Levee Improvement Program was used for this analysis. This adopted version is capable of modeling anticipated levee breaks or of allowing levee overtopping without failures. UNET is a one-dimensional unsteady open-channel flow model with the ability to simulate exchange of flow over levees with storage areas. The MBK UNET model results were a maximum composite of simulations made using hydrologic data for two storm centering scenarios: Sacramento River at latitude of Sacramento and Feather River at Shanghai Bend. In addition, the American River peak flow in the 100-year flood was 145,000 cfs, the current FEMA condition; in the 200-year flood the peak flow was 160,000 cfs, the expected future peak flow.

The resulting maximum water surface elevation profiles (for the 1/100 and 1/200 AEPs), the approximate tops of the levees, and the original 1957 Flood Control Project design floodplain for the Sacramento River and Sacramento Bypass are provided in Figures 3.2-4 through 3.2-7 and Table 3.2-13 of the program section.

The MBK UNET model indicates no levee overtopping will occur along the Sacramento River or the Sacramento Bypass for the 100-year or the 200-year design floodflows. More information is provided in MBK Engineers' *Hydraulics Report for the City of West Sacramento Levee Alternatives Analysis* (2007) and Northwest Hydraulic Consultant's *West Sacramento Levees System: Problem Identification Report, Erosion Assessment and Treatment Alternatives, Draft for Review* (2007a).

Refer to the program section for a description of flood elevations and levee height evaluation by reach and for a complete description of modeling of hydraulic effects.

4.4.1.2.4 Past Sea-Level Rise in the Program Area

MBK Engineers (2009b) applied the USACE sea-level rise guidance (U.S. Army Corps of Engineers 2009b) to the WSLIP in order to determine the effects of potential sea-level rise on the program area. Since the WSLIP sea-level rise analysis is in support of the pre-existing project design, many of the points in the USACE policy guidance do not apply, particularly those which refer to the comparison of project alternatives. The MBK Engineers (2009b) report uses the procedure for calculating sea-level rise that is identified in the USACE guidance, and applies that procedure to the proposed WSLIP design.

Analysis of Historic Mean Sea Level Change

As described in the MBK Engineers (2009b) report, the nearest tide station with sufficient period of record (40+ years recommended) is the NOAA station 9414290 at San Francisco, CA. Tidal records for this station have been maintained back to the 1850s.

The NOAA Center for Operational Oceanographic Products and Services (CO-OPS) has analyzed the historic mean sea level for this site, which has been shown to be increasing at a rate of 2.01mm/yr (California Climate Change Center 2009 as cited in MBK Engineers 2009b). Projections of future mean sea level change are discussed in the program section.

4.4.2 Environmental Consequences

This section describes the environmental consequences relating to hydrologic, hydraulic, geomorphic, and flood control issues for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. These effects tier from the program analysis effects, described in Section 3.2.3.3, Effects and Mitigation Measures.

4.4.2.1 Assessment Methods

Assessment of environmental effects associated with hydrology, hydraulics, geomorphology, and flood control issues has been accomplished through the following means:

- MBK Engineers (2009) quantitative modeling of the WSLIP,
- MBK Engineers (2007) quantitative modeling of the effects of Sacramento River West Levee Setback at Oak Hall Bend,
- MBK Engineers (2005) hydraulic analysis of the effects of potential cumulative development in the Sacramento River corridor floodway between Verona and Courtland on flood stages and flows,
- an evaluation of existing conditions of proposed program area levees and projected incision and scour estimates in the adjacent waterways,
- qualitative assessments of sedimentation/scour potential based on existing Federal and state channel hydraulic design standards and guidelines, and
- determination of effects through professional judgment.

4.4.2.2 Determination of Effects

The criteria used for determining the significance of an effect on hydrology, hydraulics, geomorphology, and flood control are based on NEPA standards, Appendix G of the State CEQA Guidelines (Environmental Checklist) and standards of professional practice.

Effects on hydrologic or geomorphic conditions may be considered significant if implementation of an alternative would:

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site;
- substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;
- place within a 100-year flood hazard area structures that would impede or redirect floodflows; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Effects on flood control may be considered significant if implementation of an alternative would:

- significantly raise flood stage elevations;
- increase the frequency and duration of inundation of lands; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee.

An effect on the levee system is considered significant if an alternative would substantially increase any of the following:

- seepage,
- levee settlement,
- wind erosion,
- bank erosion or bed scour,
- sediment deposition, or
- subsidence of land adjacent to levees.

In addition, an effect on the levee system is considered significant if an alternative would substantially decrease any of the following:

- levee stability;
- inspection, maintenance, or repair capabilities;
- current level of levee slope protection;
- emergency response capabilities;
- channel conveyance capacity; or
- the ability of the levees to withstand seismic forces.

4.4.3 Effects and Mitigation Measures

Effects related to mean sea level change are only addressed in the No Action Alternative in the program section because the WSLIP program area is relatively insensitive to the rates of sea-level rise. Of all the scenarios analyzed, only the high sea-level rise rate 100 years after the project is constructed shows greater than one-tenth of a foot stage increase in the Sacramento River, Yolo Bypass, or Sacramento Bypass in the WSLIP program area.

4.4.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. Current levee operations and maintenance activities would continue, but there would be no change in the geomorphic and flood control regimes relative to existing conditions.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the magnitude described in the Flood Control and Geomorphic Conditions program analysis (Section 3.2.3.3.1). In summary, those effects could include excessive saturation and weakening of all of the city's levees, reducing levee integrity and resulting in an even greater risk of levee collapse, failure and further flooding and damage. Additionally, proposed levee strengthening projects in upstream areas may transfer flood risk to the study area if the Sacramento Bypass Levee remains below current engineering standards while other upstream levees are improved to meet or exceed current standards. However, given the uncertainty of the occurrence or magnitude of such an event, potential effects on geomorphic and flood control conditions cannot be quantified based on available information. Compliance with future vegetation policy enforcement on the Sacramento Bypass Levee would not have any noteworthy effects on the geomorphic and/or flood control regimes of the Sacramento Bypass.

4.4.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on hydrologic, hydraulic, geomorphic, and flood control issues. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	Less than significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A

Effect FC-3: Alteration of the Existing Drainage Pattern of the Site or Area

Implementation of slope flattening will involve earthwork on the landward side of the levee. The new material on the landside could alter surface runoff patterns. Because interference with drainage could cause or exacerbate local flooding, this effect may be significant. The implementation of Mitigation Measure FC-FC-MM-1 would reduce this effect.

Mitigation

Mitigation Measure FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design

WSAFCA and their primary contractors for engineering design and construction will ensure that the following measures are implemented to avoid significant effects associated with disruption of local drainage systems.

During project design, project engineers will coordinate with owners and operators of local drainage systems and landowners served by the systems to evaluate pre- and post-WSLIP drainage needs and design features to remediate any project-related substantial drainage disruption or alteration in runoff that would increase the potential for local flooding. If substantial alteration of runoff patterns or disruption of a local drainage system could result from a project feature, a drainage study will be prepared as part of project design. The study will consider the design flows of any existing facilities that would be crossed by project features and develop appropriate plans for relocation or other modification of these facilities and construction of new facilities, as needed, to ensure equivalent functioning of the system during and after construction. If no drainage facilities (e.g., ditches, canals) would be affected, but project features would have a substantial significant effect on runoff amounts and/or patterns, new drainage systems will be included in the design of project alternatives to ensure that the project would not result in new or increased local flooding. Any necessary features to remediate project-induced drainage problems will be constructed before the project is completed or as part of the project, depending on site-specific conditions.

Effect FC-6: Decrease in Through and Under-Seepage

Through- and under-seepage has the potential to weaken levee foundations. The implementation of a slurry cutoff wall would reduce or eliminate the potential for seepage. Slurry cutoff walls create walls of impermeable material that act as a barrier to water moving laterally through a levee, greatly reducing or eliminating the potential for through-seepage. Implementation of a slurry wall would result in beneficial effects on flood conditions in the study area.

Effect FC-7: Transfer of Seepage to Upstream or Downstream Levees

Installation of a slurry cutoff wall at the CHP Academy project area may have a slight effect on the potential for seepage to occur through levee sections immediately upstream or downstream, as a result of the redirection of hydraulic force.

However, the change in hydrologic conditions resulting from this treatment is not expected to result in a substantial increase in seepage through or under adjacent levees because any upstream or downstream levee will be engineered appropriately to an equal level of protection. Incremental improvements to the system will be made over a period of years and these improvements would reduce or eliminate any seepage problems.

This alternative is also not expected to have an effect on upstream or downstream water surface elevations because the height of the levee would not be increased and current seepage rates do not contribute to substantial reductions in channel flows or water surface elevations.

Effect FC-8: Increase in Levee Slope Stability

The proposed slope flattening will repair and reshape slopes that are too steep and do not meet current standards. This would result in an increase in levee slope stability and a beneficial effect for geomorphic and flood conditions.

4.4.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on hydrologic, hydraulic, geomorphic, and flood control issues.

Effect	Finding	With Mitigation	Mitigation Measure
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	Less than significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A
FC-9: Redirection of Under-Seepage	Beneficial	N/A	N/A

Effect FC-3: Alteration of the Existing Drainage Pattern of the Site or Area

Implementation of slope flattening will involve earthwork on the landward side of the levee. The new material on the landside could alter surface runoff patterns. Because interference with drainage could cause or exacerbate local flooding, this effect may be significant. The implementation of Mitigation Measure FC-FC-MM-1, as described above under CHP APA, would reduce this effect to less than significant.

Effect FC-8: Increase in Levee Slope Stability

The construction of a stability berm on the landside of the Sacramento Bypass Levee would act as a buttress to stabilize the slope of the levee. Stabilizing slopes would increase levee slope stability and have a beneficial effect on flood control conditions.

Effect FC-9: Redirection of Under-Seepage

The proposed relief wells and interior drain will provide pathways to safely capture and release under-seepage and reduce the potential for under-seepage to weaken levee foundation soils via piping or sand boils. These project elements would create beneficial effects on geomorphic and flood conditions in the project area.

Section 4.5

Water Quality and Groundwater Resources—CHP Academy Early Implementation Project

4.5.1 Affected Environment

This section described the affected environment for water quality and groundwater resources in the CHP Academy EIP project area, including the regulatory and environmental settings.

4.5.1.1 Regulatory Setting

4.5.1.1.1 Federal

The following Federal regulations related to water quality and groundwater resources may apply to the CHP Academy EIP. Please see Section 3.3.2.1, Regulatory Setting, for a more complete description of each policy.

- Clean Water Act
- Section 404: Permits for Fill Placement in Waters and Wetlands
- Section 402: Permits for Discharge to Surface Waters
- Section401: Water Quality Certification
- Section 303: Impaired Waters

4.5.1.1.2 State

The following policies or agencies related to water quality and groundwater resources may apply to the CHP Academy EIP. Please see Section 3.3.2.1, Regulatory Setting, for a more complete description of each policy.

- Porter-Cologne Water Quality Control Act
- Central Valley Regional Water Quality Control Board
- Basin Plans and Water Quality Objectives
- Water Quality Objectives by Region
- State Implementation Plan

4.5.1.1.3 Local

The following local policies related to water quality and groundwater resources may apply to the implementation of the CHP Academy EIP. Please see Section 3.3.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

4.5.1.2 Environmental Setting

The following considerations are relevant to surface water quality and groundwater resources in the proposed CHP Academy EIP project area. The CHP Academy EIP project area is adjacent to the Sacramento River and involves work within the Sacramento Bypass. Existing surface water quality and groundwater quality are summarized below and more fully described in Section 3.32.2, Environmental Setting.

4.5.1.2.1 Surface Water Quality

The water quality of the Sacramento River is good to excellent, with relatively cool water temperatures, low BOD, medium to high DO, and low mineral and nutrient content. In general, the surface water quality of the Sacramento River is representative of agricultural return flows, urban runoff, and natural sedimentation from scouring. Water quality issues of concern within the Sacramento River include TSS and turbidity, DO, temperature, electrical conductivity, and pH. The Sacramento bypass diverts Sacramento River flood flows around the city of West Sacramento.

4.5.1.2.2 Groundwater Quality

Groundwater levels in the Yolo Sub-basin are affected by drought, pumping, and reduced surface water discharge. Groundwater quality is considered good for agricultural and municipal purposes, although the water is hard.

4.5.2 Environmental Consequences

This section describes the environmental consequences relating to surface water and groundwater quality for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects tier from the program analysis effects described in Section 3.3.3.3, Effects and Mitigation Measures.

4.5.2.1 Assessment Methods

This evaluation of surface water quality and groundwater quality is based on professional standards and information obtained from the Central Valley RWQCB, State Water Board, and DWR.

The key effects were identified and evaluated based on the environmental characteristics of the CHP Academy EIP project area and the magnitude, intensity, and duration of activities related to the construction of this project.

4.5.2.2 Determination of Effects

For this analysis, an effect pertaining to surface water quality and groundwater quality was considered significant under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.),* and standards of professional practice:

- violate water quality standards or waste discharge requirements;

- substantially deplete groundwater supplies or interfere substantially with ground water recharge;
- substantially degrade water quality; or
- alter regional or local hydrology resulting in substantial increases in erosion or sedimentation.

4.5.3 Effects and Mitigation Measures

4.5.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee alternatives would be made to increase the level of protection. No construction-related effects relating to water quality such as earthmoving that result in increased turbidity, or incidental releases of construction-related contaminants would occur. Therefore, there would be no effect on surface or groundwater quality or resources attributable to the implementation of the No Action Alternative.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Water Quality and Groundwater Resources program analysis (Section 3.3.3.3.1). In summary, those effects could include spreading of contaminants from stored chemicals, septic systems, and flooded vehicles into the Sacramento Bypass, Yolo Bypass, Delta, and other nearby waterways, as well as potentially contaminating soils and groundwater. Loss of eroded levee foundation and eroded topsoil from inundated areas would increase turbidity and total dissolved solids in nearby waterways, impairing beneficial uses. Furthermore, if a levee breach were to occur, emergency construction and repair activities would likely be implemented without the use of BMPs and could result in the release of hazardous construction materials such as oil and other petroleum related products. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

4.5.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on water quality and groundwater resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	

Effect	Finding	With Mitigation	Mitigation Measure
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	Less than significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering

Effect WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids

The project involves earth-moving activities (i.e., degrading the levee prior to slurry wall construction and slope flattening) that could cause sedimentation and erosion in adjacent water bodies. The development of a SWPPP, an environmental commitment (see Section 2.9 of Chapter 2, Alternatives, for a full description) included as part of this project would reduce the likelihood that this effect would occur, or reduce the effect should it occur. This commitment includes the development of a SWPPP. Site-specific erosion control measures would be developed as part of a SWPPP, a requirement of the NPDES General Construction Permit. A SWPPP typically contains, but is not limited to, the following described best management practices:

- **Timing of construction.** Conduct earthwork during the typical construction season.
- **Staging of construction equipment and materials.** Stage construction equipment and materials on the landside of the subject levee reaches. To the extent possible, stage equipment and materials in areas that already have been disturbed.
- **Soil and vegetation disturbance.** Minimize ground and vegetation disturbance during construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations.
- **Grading spoils.** Stockpile soil and grading spoils on the landside of the subject levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If necessary, cover stockpiles with geotextile fabric to provide protection against wind and water erosion.
- **Sediment barriers.** Install sediment barriers on graded or otherwise-disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters.
- **Site stabilization.** Install native plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials may include an erosion control seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and a mulch tackifier, may be installed as needed to stabilize disturbed areas until vegetation becomes established.

Effect WQ-2: Release of Contaminants into Adjacent Water Bodies from Construction-Related Hazardous Materials

Program actions may involve storage, use, or discharge of toxic and other harmful substances near water bodies (or in areas that drain to these water bodies, e.g., the Sacramento River). Construction activities would involve the use of heavy equipment, cranes, compactors and other construction

equipment that uses petroleum products (e.g., fuels, lubricants, hydraulic fluids, coolants). All of these materials may be toxic to fish and other aquatic organisms. An accidental spill or inadvertent discharge of these materials could affect the water quality of the river or water body.

There are three environmental commitments included as part of this project that would reduce the effect of such a release should it occur or reduce the likelihood that a release would occur. These environmental commitments include the development of the SWPPP, SPCCP and a bentonite slurry spill contingency plan (BSSCP). Typical elements of the SWPPP are described above under Effect WQ-1, above. All three environmental commitments are described in detail in Section 2.9 of Chapter 2, Alternatives, and are summarized below.

An SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. WSAFCA or its contractor will develop and implement an SPCCP to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that would be taken in the event of a spill (e.g., an oil spill from engine refueling would be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures and spill response kits. It will also describe how and when employees are trained in proper handling procedure and spill prevention and response procedures.

A BSSCP is typically developed for activities that involve the use of bentonite materials (e.g., the construction of slurry walls). The BSSCP is intended to minimize the potential for a frac-out associated with excavation and tunneling activities, provide for timely detection of frac-outs, and ensure and "minimum-effect" response in the event of a frac-out and release of excavation fluid (i.e., bentonite used for the construction of slurry walls).

Release of contaminants into adjacent water bodies could result in significant effects. Adherence to these environmental commitments and the implementation of Mitigation Measure WQ-MM-1 should spills occur would reduce this effect to less than significant.

Mitigation

Mitigation Measure WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality

If an appreciable spill has occurred and results determine that project activities have significantly affected surface or groundwater quality, a detailed analysis will be performed by a registered environmental assessor or professional engineer to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, WSAFCA and its contractors will select and implement measures to control contamination, with a performance standard that surface water quality and groundwater quality must be returned to baseline conditions.

Effect WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation

Trenching and excavation associated with the construction of slurry walls may reach a depth that could expose the water table, in which case an immediate and direct path to the groundwater basin would become available for contaminants to enter the groundwater system. Primary construction-related contaminants that could reach groundwater include increased sediment, oil and grease, and hazardous materials.

In addition, while dewatering of the construction area (e.g., trenches dug for slurry wall construction that may be filled with groundwater) is not expected to occur, if it became necessary, it could result in the release of contaminants to surface or groundwater.

The implementation of the CHP Academy project is not expected to require digging or trenching at depths where groundwater aquifers utilized for drinking water occur. If trenching activities were to incidentally reach a groundwater aquifer utilized for drinking water, the slurry wall material is relatively benign and would not remain in a liquid state long enough to allow for significant lateral movement within the aquifer.

As discussed in Section 4.19, Public Health and Hazards, prior to all construction activities, WSAFCA will complete Phase I and, if necessary, Phase II Environmental Site Assessment Investigations that will include analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations. If hazardous substances are found, WSAFCA or its contractor will implement required measures for the proper transport and disposal of such materials in accordance with the appropriate local, state and Federal laws and regulations.

Effect on groundwater and drinking water quality from operation and construction could be significant. The proposed program would adhere to environmental commitments of the SWPPP, the SPCCP, and the BSSCP, as summarized above under Effects WQ-1 and WQ-2. Adherence to environmental commitments of the SWPPP, SPCCP, and the BSSCP and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2 would reduce this effect to less than significant.

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Before discharging any dewatered effluent to surface water, WSAFCA or its contractors will obtain a Low Threat Discharge and Dewatering NPDES permit from the Central Valley RWQCB. Depending on the volume and characteristics of the discharge, coverage under the Central Valley RWQCB's NPDES General Construction Permit or General Dewatering Permit is possible. As part of the permit, the permittee will design and implement measures as necessary so that the discharge limits identified in the relevant permit are met. For example, if dewatering is needed during the construction of the slurry wall, then the Low Threat Discharge and Dewatering NPDES permit would require proper disposal of the water due to the known petroleum plume present in the area. As a performance standard, these measures will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. Implemented measures may include the retention of dewatering effluent until particulate matter has settled before it is discharged, use of

infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by WSAFCA.

WSAFCA will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. WSAFCA or its agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. WSAFCA will notify its contractors immediately if there is a non-compliance issue and will require compliance.

4.5.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on water quality and groundwater resources. A description of the effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	Less than significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering

Effect WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids

Effects on surface water quality from excessive turbidity or total suspended solids are the same for Alternative B as that described for Alternative A, above, For Alternative B, the earth moving activities that would cause such an effect are those associated with slope flattening and stability berm construction Environmental commitments remain the same. This effect is considered less than significant. No mitigation is required.

Effect WQ-2: Release of Contaminants into Adjacent Water Bodies from Construction-Related Hazardous Materials

The effects described under the CHP APA, above, also apply to Alternative B. However, Alternative B would not require the implementation of a BSSCP because no slurry wall construction is involved in Alternative B. This effect is considered less than significant. No mitigation is required.

Effect WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation

Trenching and excavation associated with the construction of the interior drain, stability berm and relief wells may reach a depth that could expose the water table, in which case an immediate and

direct path to the groundwater basin would become available for contaminants to enter the groundwater system. Primary construction-related contaminants that could reach groundwater include increased sediment, oil and grease, and hazardous materials.

In addition, while dewatering of the construction area (e.g., trenches dug for slurry wall construction that may be filled with groundwater) is not expected to occur, if it became necessary, it could result in the release of contaminants to surface or groundwater.

The implementation of the CHP Academy Alternative B is not expected to require digging or trenching at depths where groundwater aquifers utilized for drinking water occur. Therefore no effects on drinking water would occur. As discussed in Section 4.19, Public Health and Hazards, prior to all construction activities, WSAFCA will complete Phase I and, if necessary, Phase II Environmental Site Assessment Investigations that will include analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations. If hazardous substances are found, WSAFCA or its contractor will implement required measures for the proper transport and disposal of such materials in accordance with the appropriate local, state and Federal laws and regulations.

Effect on groundwater and drinking water quality from operation and construction could be significant. The proposed program would adhere to environmental commitments of the SWPPP, and the SPCCP, as summarized above under CHP APA Effects WQ-1 and WQ-2. Adherence to environmental commitments of the SWPPP, and the SPCCP and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2 would reduce this effect to less than significant.

Section 4.6

Geology, Seismicity, Soils, and Mineral Resources—CHP Academy Early Implementation Project

4.6.1 Affected Environment

This section describes the affected environment for geology, seismicity, soils, and mineral resources in the CHP Academy EIP project area, including the regulatory and environmental setting.

4.6.1.1 Regulatory Setting

4.6.1.1.1 State

The following state policies related to geology, seismicity, soils, and mineral resources may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.4.2.1, Regulatory Setting, for a more complete description of each policy.

- Alquist-Priolo Earthquake Fault Zoning Act
- Seismic Hazards Mapping Act
- California Building Standards Code
- California Surface Mining and Reclamation Act

4.6.1.1.2 Local

The following local policies related to geology, seismicity, soils, and mineral resources may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.4.2.1, Regulatory Setting, for a more complete description of each policy.

- *Draft 2030 Countywide General Plan* for Yolo County
- *City of West Sacramento General Plan*
- Grading and Erosion Control Ordinances

4.6.1.2 Environmental Setting

This section discusses the environmental setting related to soil characteristics, mineral resources, and seismic hazards for the CHP Academy EIP.

4.6.1.2.1 Study Area

Geology and Topography

The surface and subsurface distributions of sandy and clayey deposits in the CHP Academy EIP project area are a function of former river positions on the landscape, present-day geomorphic processes adjacent to the river positions on the landscape, and present-day geomorphic processes

adjacent to the river channel (i.e., flooding and deposition) (William Lettis & Associates 2007). Helley and Harwood (1985) compiled previous regional studies of the quaternary geology of the Sacramento Valley. Previous geologic mapping in the West Sacramento study area generalized the surficial deposits as Quaternary alluvium (Qa) proximal to the modern river channel and undifferentiated Quaternary basin (Qb) deposits away from the modern river channel. Helley and Harwood (1985) differentiate basin deposits from alluvium on the basis of composition, including only those deposits that are finer-grained and frequently organic-rich, and suggests these deposits were distal deposits where energy conditions were much lower. Both of these map units are considered Holocene age.

Geologic mapping indicates that the Sacramento Bypass Levee is underlain by a combination of alluvium and basin deposits (Helley and Harwood 1985) and buried sandy crevasse splay deposits (William Lettis & Associates 2007).

4.6.1.2.2 Soils

The CHP Academy EIP project area comprises three distinct soil map units as identified by the USDA Conservation Service (U.S. Department of Agriculture Soil Conservation Service 1972): Lang sandy loam, deep, Lang sandy loam, deep, flooded, and Sycamore silt loam (Figure 4.6-1). These soil types are characterized in Table 3.4-1, Section 3.4.2.2.2. The under-seepage deficiencies identified at the CHP Academy project area are caused primarily by the presence at depth of coarse, permeable soils (sands and gravels) that translate hydraulic pressure during flood stage beneath the levees and destabilize them. In other words, the coarse-textured soil material common to the Lang and Sycamore soil series found at the CHP Academy project area facilitates seepage pathways, which compromise levee integrity.

4.6.1.2.3 Mineral Resources

No commercial mining operations are known to have occurred in West Sacramento. Most of the area is classified as MRZ-1 by the California Division of Mines and Geology, which indicates no significant mineral deposits are present. The portion of the West Sacramento area that borders the Sacramento River (and henceforth the study area vicinity) is classified as MRZ-3, which means aggregate deposits of undetermined significance occur there. Lands classified as MRZ-1 or MRZ-3 are not affected by state policies pertaining to the maintenance of access to regionally significant mineral deposits under the California Surface Mining and Reclamation Act of 1975.

4.6.1.2.4 Seismic Hazards

Seismic hazards refer to earthquake fault ground rupture and ground shaking (primary hazards), as well as liquefaction and earthquake-induced slope failure (secondary hazards). Localized ground shaking and liquefaction are the most significant seismic hazards in Yolo County (Yolo County 1983).

Primary Seismic Hazards—Surface Fault Rupture[1] and Groundshaking

The project area is located in a region of California characterized by low seismic activity. The UBC recognizes no active seismic sources in the project vicinity (International Conference of Building

[1] *Surface fault rupture* is a rupture at the ground surface along an active fault, caused by earthquake or creep activity.

Officials 1997), and no active faults are known to cross the project area. The project area is located within UBC Seismic Hazard Zone 3. Refer to the program description for further information.

Liquefaction

Poorly consolidated, water-saturated fine sands located within 30 to 50 feet of the surface typically are considered the most susceptible to liquefaction. Soils and sediments that are not water-saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction (California Division of Mines and Geology 1997).

URS performed a liquefaction-triggering analysis to evaluate whether any levee or underlying foundation materials potentially would liquefy during the considered earthquake events. Criteria for susceptibility to liquefaction included soil type, liquid limit, plasticity index, water content, and fines content. If the material was considered to be susceptible to liquefaction, steps were completed to further evaluate the liquefaction potential of the material considering the earthquake loading. In contrast, if the plasticity of the material was high enough to preclude liquefaction, the material was classified as non-liquefiable, irrespective of the earthquake loading (URS 2007). The Sacramento Bypass may exhibit liquefaction during a seismic event (HDR, Inc. 2008a).

4.6.2 Environmental Consequences

This section describes the environmental consequences relating to geology, seismicity, soils, and mineral resources for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.4.3.3, Effects and Mitigation Measures.

4.6.2.1 Assessment Methods

Evaluation of the geology, seismicity, and soils effects in this section is based on the information provided by technical maps, reports, and other documents that describe the geologic, seismic, and soil conditions of the study area. This information was then compared to the type and location of proposed flood and recreation alternatives to determine whether effects would occur.

4.6.2.2 Determination of Effects

Criteria for determining the significance of effects related to geology, soils, and mineral resources were developed based on the environmental checklist form in Appendix G of the State CEQA Guidelines (14 CCR 15000 *et seq.*). An effect related to geology, soils, and seismicity was considered significant if it would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other



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Figure 4.6-1
Soil Types at the CHP Academy Early Implementation Site

substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);

- strong seismic ground shaking;
- seismic-related ground failure, including liquefaction; or
- landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater;
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

4.6.3 Effects and Mitigation Measures

4.6.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects involving direct ground-disturbing activities or changes to flood control facilities that could result in changes in geology, seismicity, soils, or mineral resources would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Geology, Seismicity, and Soils program analysis (Section 3.4.3.3.1). In summary, these effects could include loss of topsoil, additional levee collapse, alteration of regional and local hydrology, and an increase in erosion and sedimentation. It is assumed that these effects would be significant; however, given the uncertainty of the occurrence or magnitude of such an event, the effects cannot be quantified based on available information.

Furthermore, the beneficial effects attributable to program implementation such as improved levee stability and decreased levee bank erosion would not be realized under the No Action Alternative.

4.6.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on geology, seismicity, soils, and mineral resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A
GEO-5: Structural Damage and Injury from Development on Expansive Soils	Significant	Less than significant	GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report

Effect GEO-1: Effects on Levee Stability

The proposed slope flattening would improve the stability of the Sacramento Bypass Levee by further reducing seepage and the potential for seepage-related failures by reducing hydrostatic exit gradients, creating more stable slopes and reducing erosion. Therefore, this effect would be beneficial.

Effect GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction

Based on available knowledge of fault location and locations of earthquake epicenters, the risk of groundshaking in the study area is low. Nonetheless, a large earthquake on a nearby fault could cause groundshaking in the study area, which could result in liquefaction or associated ground failure, such as lateral spreading or differential settlement which could in turn result in structural loss, injury, and death.

The Sacramento Bypass levee contains soils that may be subject to liquefaction. Implementation of the proposed CHP APA would not substantially alter the composition of the subject levees or foundation soils or increase their susceptibility to liquefaction. The CHP APA does propose the construction of a slurry cutoff wall to reduce seepage and increase flood control that might sustain damage from groundshaking or liquefaction and endanger people during a seismic event.

However, the potential for failure of this structure from groundshaking would depend on the degree of levee saturation during an earthquake. A high level of saturation would likely only occur during a major flood event. The probability that a large regional earthquake would occur during a major flood event is relatively low, but such coincidence is not impossible. Nonetheless, because of the relative small likelihood of such coincidental events, and because the expected magnitude of groundshaking from large regional earthquakes is relatively low in the study area, the potential for failure or damage of the slurry cutoff wall is considered to be less than significant. No mitigation is required.

Effect GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance

The grading, trenching, and other earthwork that would be conducted during construction of the CHP APA would result in substantial ground and vegetation disturbance. These disturbances would increase the hazard of erosion and could temporarily increase erosion and sedimentation rates above existing levels. Because most of the earthwork would be conducted on and immediately adjacent to the levee, accelerated erosion and sedimentation resulting from construction-related ground and vegetation disturbance would not result in the loss of appreciable quantities of topsoil resources. In addition, most ground-disturbing activities would occur during the typical construction season, when conditions are generally dry, further reducing the potential for construction-related erosion.

Site-specific measures that would control erosion would be described in more detail in the SWPPP, which is included in the environmental commitments of the program, described in further detail in Section 2.9 of Chapter 2, Alternatives, and summarized in Section 4.5, Water Quality of this chapter. The SWPPP is a requirement of the NPDES General Construction Permit.

With this project-level action, erosion and sediment-related effects would be less than significant. No mitigation is required.

Effect GEO-5: Structural Damage and Injury Resulting from Development on Expansive Soils

According to the soil survey for Yolo County, moderate to high shrink-swell potential (soil expansiveness) exists in the study area within the Sacramento Bypass Levee reaches. Additionally, expansive soil and sediments were encountered at various depths below the levees in the study area during geotechnical investigations (Kleinfelder 2007). Expansive soils have the potential to compromise the structural integrity of the proposed slurry cutoff wall.

As previously discussed, WSAFCA would require the preparation of a preliminary soil report based on soil borings and, if expansive or weak soils are documented on site, a soils investigation detailing corrective action. These corrective actions likely would prevent structural damage. This effect would be significant, but implementation of Mitigation Measure GEO-MM-1 would reduce this effect to less than significant.

Mitigation

Mitigation Measure GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report

WSAFCA will implement special engineering techniques identified in a project-specific geotechnical report, which may include using reinforced steel and drainage control devices, and/or over-excavating and backfilling with non-expansive soil. WSAFCA or its contractor will select one or more of the recommended measures in consultation with a qualified engineer and the WSAFCA engineer before construction activities begin.

4.6.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on geology, seismicity, soils, and mineral resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A
GEO-5: Structural Damage and Injury from Development on Expansive Soils	Significant	Less than significant	GEO-MM-1: Implement the Corrective Actions Identified as Part of a Project-Specific Geotechnical Report

Effect GEO-1: Effects on Levee Stability

The proposed stability berm, interior drain and relief wells would improve the stability of the Sacramento Bypass Levee by further reducing seepage and the potential for seepage-related failures by reducing hydrostatic exit gradients, creating more stable slopes and reducing erosion. Therefore, this effect would be beneficial.

Effect GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction

This effect is the same as that described under the CHP APA, above, with the exception of the structures that may sustain damage are a stability berm, interior drain, and relief wells. The effect is considered less than significant. No mitigation is required.

Effect GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance

This effect is the same as that described under the CHP APA, above. This effect is considered less than significant. No mitigation is required.

Effect GEO-5: Structural Damage and Injury Resulting from Development on Expansive Soils

The effect and mitigation measure are the same as that described under the CHP APA, above. The effect is considered less than significant with the implementation of mitigation measure, GEO-MM-1, also described above.

Section 4.7

Transportation and Navigation—CHP Academy Early Implementation Project

4.7.1 Affected Environment

This section describes the affected environment for transportation and navigation in the CHP Academy EIP project area, including the regulatory and environmental settings.

4.7.1.1 Terminology

The following are definitions of key traffic and transportation terms used in this section, in addition to the definitions provided in Section 3.5.1.1.

- **Annual average daily traffic (AADT)**: AADT is the total traffic volume for the year divided by 365 days.
- **Peak Hour:** This is an estimate of the peak hour traffic at all points on the state highway system.
- **Back and Ahead**: Back AADT, Peak Month, and Peak Hour usually represent traffic south or west of the count location. Ahead AADT, Peak Month, and Peak Hour usually represent traffic north or east of the count location.

4.7.1.2 Regulatory Setting

4.7.1.2.1 Federal

The following Federal policies related to transportation and navigation may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.5.2.1, Regulatory Setting, for a more complete description of each policy.

- River and Harbors Appropriation Act of 1899

4.7.1.2.2 Local

The following local policies related to transportation and navigation may apply to the implementation of the CHP Academy EIP. Please see Section 3.5.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

4.7.1.3 Environmental Setting

This section discusses the environmental setting related to transportation and navigation in the study area for the CHP Academy EIP.

4.7.1.3.1 Roadways

Existing freeways within or near the project area are described below.

- **Interstate 80 (I-80)** is a major freeway that runs northeast to southwest at the southeastern edge of the project area. I-80 heads toward Reno to the east and San Francisco to the west. The freeway runs above the Sacramento River North Levee, and would not be affected by the proposed project.
- **Highway 50 (US 50)** is a major highway that runs east to west, south of the project area. US 50 heads towards Carson City to the east and merges with I-80 on the western side of West Sacramento as it heads towards San Francisco.

Table 4.7-1 shows the Back and Ahead AADT for the highway segments that would be most affected by project-related traffic.

Table 4.7-1. AADT for Highways in the CHP Academy Project Area

Highway	Segment	Back AADT	Ahead AADT
I-80	Junction with Route 50	145,000	85,000
I-80	Junction with Route 84 (Reed Avenue)	85,000	90,000
I-80	West El Camino Avenue Interchange	90,000	87,000
US 50	Junction with Route 80	–	85,000
US 50	Harbor Boulevard Interchange	85,000	116,000

Source: California Department of Transportation 2009.

The major arterial streets that serve the project area or that may be affected by project implementation are:

- **Reed Avenue/Sacramento Avenue/C Street (SR 84)** runs east-west between I-80 near the western City Limits and the I Street Bridge at the Sacramento River. The roadway width varies between two and four lanes. Reed Avenue is classified under the LOS Criteria for Roadway Segments as a four-lane arterial with moderate access control.
- **North Harbor Boulevard** runs north-south parallel to the Sacramento River North Levee and crosses the easternmost end of the Sacramento Bypass Levee before continuing over the Sacramento Bypass. In the section of the road adjacent to the project area, Harbor Boulevard is a two-lane road. Harbor Boulevard is classified as a two-lane arterial with moderate access control.

Local roads that run adjacent to or along the crest of the project area levees include Tule Jake Road and various roadways that are part of the CHP Academy EIP project area. Tule Jake Road is a gravel road that runs along the crest of the Sacramento Bypass Levee and is accessible to maintenance vehicles only. The roads on the CHP Academy EIP project area are used for training and would not be affected by project implementation. Table 4.7-2 shows the ADT, peak-hour traffic, and LOS for these major roadways.

Table 4.7-2. ADT, Peak-Hour Traffic, and LOS for Major Roadways in the CHP Academy Project Area

Street	Limits	ADT	AM Peak	PM Peak	LOS	Count Year
North Harbor Boulevard	Riverbank Road to Reed Avenue	4,529	467	484	A	2007
North Harbor Boulevard	City Limits to Riverbank Road	4,801	354	484	A	2007
Reed Avenue	Riverside Parkway to Sunset Avenue	15,930	1,036	1,229	A	2005

Source: City of West Sacramento 2007.

According to the City's LOS standards, all three haul route segments that lie within or near the project area have a LOS of A.

4.7.1.3.2 Parking

On-street parking in the project area is limited to the shoulder of North Harbor Boulevard and gravel area at the entrance to Tule Jake Road. The City does not have any public parking lots in or near the project area. Construction projects are subject to off-street parking standards as defined in the City's Zoning Ordinance (City of West Sacramento 2000).

4.7.1.3.3 Railroads

The Union Pacific Railroad runs parallel to North Harbor Boulevard on the western side of the street (adjacent to Sacramento River North Levee). The railroad runs southeast to northwest, and crosses the eastern end of the Sacramento Bypass Levee as it runs from the City to Woodland (City of West Sacramento 2009b).

4.7.1.3.4 Transit Facilities

Yolo Bus 240, which runs from West Sacramento to Sacramento, runs along Reed Avenue, south of the project area. No other transit facilities are located within the project area (Yolo county Transportation District 2009).

4.7.1.3.5 Bikeways

Bicycle facilities are currently available in the project vicinity. Major arterial roads and several minor arterial roads throughout the city have bike lanes or bike-accessible shoulders. Bike-accessible areas that run adjacent to or on top of levees in the project vicinity include North Harbor Boulevard (Sacramento River North Levee) (City of West Sacramento 2009a).

4.7.1.3.6 Airports

Airports in the area include Sacramento International Airport, Sacramento Executive Airport, Mather Airport, and Franklin Field. Sacramento International Airport is Sacramento County-owned and is located approximately 7 miles north of the city, between Sacramento and Woodland along I-5. The Executive Airport is owned by Sacramento County and is located 1.5 miles to the east of the city, within the city of Sacramento. Mather Field is a military airfield located approximately 11 miles east of the City in Rancho Cordova. Franklin Field is owned by Sacramento County and is located approximately 16 miles south of the city in Elk Grove.

4.7.1.3.7 Navigation

The Sacramento River is the only permanent waterway that lies adjacent to the project area. The river flows in a generally southward direction past the Sacramento River North Levee. The river is approximately 650 feet wide where it passes the project area; however, widths vary with water elevations. Navigation in the Sacramento River is limited to recreational watercraft because the river is too small and fluctuating water levels prevent the accommodation of large commercial vessels.

On the West Sacramento bank, in the project vicinity, there are no docks or other access points to the river. On the city of Sacramento side, there are several private docks that belong to homeowners living on top of or adjacent to the levee.

4.7.2 Environmental Consequences

This section describes the environmental consequences relating to transportation and navigation for the proposed CHP Academy EIP project area. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of CHP Academy EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.5.3.3, Effects and Mitigation Measures.

4.7.2.1 Assessment Methods

The proposed project would construct levee alternatives along a section of the Sacramento Bypass Levee. Because of the earthwork involved and the need for materials deliveries, construction would intermittently generate substantial volumes of traffic. Once the construction is completed, maintenance needs would be similar to current conditions. Analysis of traffic effects therefore concentrated on the construction of levee alternatives.

For the purposes of analysis, the effects of these project activities were analyzed according to truck and worker trip effects on roadway operation and circulation. Haul routes for the CHP Academy EIP are shown in Figure 4.7-1.

This analysis used estimated construction traffic generation (expressed as average trips per day) to develop a qualitative evaluation of short-term effects on the local and regional roadway in the project vicinity. Table 4.7-3 summarizes construction phase-related trips anticipated for the CHP Academy APA and CHP Academy Alternative B, which includes trips generated by trucks hauling away excavated materials, and trucks delivering construction equipment and materials. Daily truck trips required to haul away excavated spoils and import fill materials are estimated based on a typical capacity of 20 cubic yards per truck . Each truck and each work would generate two construction-related trips. A detailed list of construction equipment, construction areas, daily and total excavation, and daily total imported material for each phase are included in Appendix E.

The key effects were identified and evaluated based on the environmental characteristics of the CHP Academy EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.



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Figure 4.7-1
CHP Academy EIP Haul Routes

Table 4.7-3. Estimated Daily Construction Traffic by Alternative and Construction Phase

Phase of Construction	Duration (Days)	Daily Exported Spoils and Imported Material (cy)	Workers per day	Estimated Maximum Daily Truck Trips	Estimated Maximum Daily Worker Trips	Maximum Total Daily Trips
APPLICANT PREFERRED ALTERNATIVE						
Clearing and grubbing	9	2,200	20	220	40	260
Concrete removal	7	146	12	8	24	32
Levee degrade	26	2,200	19	220	38	258
Slurry wall construction	29	1,200	11	4	22	26
Fill placement	27	2,982	29	298	58	356
Concrete placement	24	43	11	8	22	30
ALTERNATIVE B						
Clearing and grubbing	4	2,200	20	220	40	260
Excavate stability Berm	5	2,200	20	220	40	260
Install stability Berm and drain system	31	2,343	22	234	44	278
Install relief wells	22	N/A	7	2	14	16
CHP ACADEMY TRAIL IMPROVEMENT						
Grading	8	0	10	0	20	20
Install pathways and signs	12	154	10	16	20	36

Source: HDR Engineering, Inc.
cy = cubic yards.

4.7.2.2 Determination of Effects

For this analysis, a transportation effect was considered significant if it would result in any of the following outcomes, which are based on professional practice, State CEQA Guidelines Appendix G, *City of West Sacramento General Plan Policy Document*, and the City's LOS policies:

- cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the V/C ratio on roads, or congestion at intersections);
- cause, either individually or cumulatively, exceedance of a LOS standard established by the City and/or the California Department of Transportation (Caltrans) for designated roads or highways;
- substantially alter present patterns of circulation or movement;
- substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., slow-moving vehicles);
- result in inadequate emergency access;
- result in inadequate parking capacity; or

- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks); or substantially impede navigation of watercraft as a result of the installation of cofferdams or the staging of barges within navigable sections of the surrounding waterways.

4.7.3 Effects and Mitigation Measures

4.7.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. Under the No Action Alternative, there would be no change in the characteristics of the regional transportation system, local roadways, or navigation in the project area. It is likely that the levee roads and other roads in the program area would continue to be maintained by the City. No road modifications, including the raising and building of new roads, would occur, and navigation would not change under the No Action Alternative.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Transportation and Navigation program analysis (Section 3.5.3.3.1). In summary, those effects could include widespread damage to the city's utilities, roadways, railways, major interstate transportation corridors, and other infrastructure systems, interrupting emergency response services and hindering the region's and the state's abilities to move goods and people. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

4.7.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on transportation and navigation. A description of these effects is provided below the summary table. The CHP APA would avoid the UPRR tracks that run adjacent to the eastern end of the Sacramento Bypass Levee. Construction-related activities would not have an effect on its normal operations. Therefore, effects on railroads are not addressed further in this section.

Effect	Finding	With Mitigation	Mitigation Measure
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Less than significant	N/A	N/A
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A

Effect	Finding	With Mitigation	Mitigation Measure
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A

The following detail for Effect TN-1 is specific to the CHP Academy APA and project site:

Effect TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic

Effect TN-1 would apply only to highways and surface streets in the CHP Academy EIP project area. Implementation of the CHP Academy APA would require hauling of construction equipment and materials to the CHP Academy EIP project area along major highways and through surface streets in the city.

The use of highways to haul construction equipment and materials to and from the CHP Academy EIP project area would increase daily traffic. Additionally, many of the construction-generated trips would involve slow-moving trucks, which would further affect highway traffic. However, the increase in AADT would be relatively small. With the addition of the maximum daily construction-generated traffic shown in Table 4.7-3 to the AADT counts in Table 4.7-1, the maximum increase in traffic along any of the segments of these highways would be 0.42%. This increase in AADT is not expected to significantly degrade the operation of highways near the project area.

Surface routes that would be used would be along Reed Avenue and Harbor Boulevard. Table 4.7-4 shows the existing ADT levels on the roads to be used as haul routes for the CHP Academy APA with the addition of the maximum daily construction-generated traffic shown in Table 4.7-3.

Table 4.7-4. Existing and Projected ADT on Haul Routes for the CHP Academy APA

Street	Limits	Existing ADT	Existing LOS	Max Trips/Day	ADT During Construction
North Harbor Blvd	Riverbank Rd to Reed Ave	4,529	A	356	4,885
North Harbor Blvd	City Limits to Riverbank Rd	4,801	A	356	5,157
Reed Ave	Riverside Pkwy to Sunset Ave	15,930	A	356	16,286

The construction traffic generated by the CHP Academy APA would temporarily increase the daily and peak hour traffic along specified routes shown in Table 4.7-4, which are operating well within the City's LOS standard. Traffic levels would return to normal levels once construction is completed. Although this addition of construction-related traffic would not be expected to degrade the LOS on haul route roads to an unacceptable level, slow-moving heavy trucks could affect traffic flow on these roadways, particularly if numerous trips occur during the morning or afternoon peak traffic periods. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter 2, Alternatives, would reduce the effects of construction traffic along highways and surface streets to a less-than-significant level.

Effect TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee

Implementation of the CHP APA will involve the use and maneuvering of large equipment that may require the adjacent Riverbank Road to be temporarily closed or reduce its usage to a single lane. Temporary road closures or reduction in use of the roads would require a detour of normal traffic to adjacent streets. The detouring of traffic would increase daily traffic quantities on roads in the surrounding areas. The environmental commitment to develop and implement a traffic control and road maintenance plan, as described in Section 2.9, in Chapter 2, Alternatives, would reduce this effect to a less than significant level.

Effect TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic

The maneuvering of construction-related vehicles and equipment among the general-purpose traffic on Riverbank and other local roads could cause safety hazards. However, execution of the environmental commitment to develop and implement a traffic control and road maintenance plan, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related traffic hazards, and would reduce the intensity of this effect. This effect would be less than significant.

Effect TN-4: Increase in Emergency Response Times

Emergency access to the project vicinity could be affected by construction of the project, and construction-related traffic could delay or obstruct the movement of emergency vehicles. However, execution of the environmental commitment to develop and implement a traffic control and road maintenance plan, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related effects on emergency response times. This effect would be less than significant.

Effect TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers

A parking area for construction workers and trucks would be provided at staging areas adjacent to a work site or areas within the levee right-of-way; therefore, this effect would be less than significant.

Effect TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures

Although most of the construction of the proposed project would take place within the project right-of-way, temporary road closures may be needed in some areas, which could interfere with transit services or bicycle travel along these roads. Implementation of the Traffic Control and Road Maintenance Plan environmental commitment, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related traffic conflicts with alternative modes of transportation. Therefore, this effect would be less than significant. No mitigation is required.

4.7.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on transportation and navigation. A description of these effects is provided below the summary table. The CHP Academy Alternative B would avoid the UPRR tracks that run adjacent to the eastern end of

the Sacramento Bypass Levee. Construction-related activities would not affect the normal operation of the tracks. Therefore, effects on railroads are not addressed further in this section.

Effect	Finding	With Mitigation	Mitigation Measure
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Less than significant	N/A	N/A
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A

Effect TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic

This effect on major highways in the project vicinity would be the same as described under the CHP APA, above. The maximum number of trips per day would be 278, rather than 356 as noted for the CHP APA, resulting in a maximum increase in traffic of 0.33% on highway segments near the project area.

This effect on surface streets in the project vicinity would be the same as described under the CHP APA, above. The maximum number of trips per day would be 278, rather than 356 as noted for the CHP APA. This effect is considered less than significant. No mitigation is required.

Effect TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee

This effect would be the same as described under the CHP APA, above. This effect is considered less than significant. No mitigation is required.

Effect TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic

This effect would be the same as described under the CHP APA, above. This effect is considered less than significant. No mitigation is required.

Effect TN-4: Increase in Emergency Response Times

This effect would be the same as described under the CHP APA, above. This effect is considered less than significant. No mitigation is required.

Effect TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers

This effect would be the same as described under the CHP APA, above. This effect is considered less than significant. No mitigation is required.

Effect TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures

This effect would be the same as described under the CHP APA, above. This effect is considered less than significant. No mitigation is required.

Section 4.8

Air Quality and Climate Change—CHP Academy Early Implementation Project

4.8.1 Affected Environment

This section describes the affected environment for air quality and climate change in the CHP Academy EIP project area, including the regulatory and environmental settings.

4.8.1.1 Air Quality Regulatory Setting

4.8.1.1.1 Federal

The following Federal policies related to air quality may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.6.2.1, Air Quality Regulatory Setting, for a more complete description of each policy.

- Clean Air Act
- General Conformity Regulation
- Federal Tailpipe Emission Standards

4.8.1.1.2 State

The following state policies or agencies related to air quality may apply to the implementation of the CHP Academy EIP. Please see Section 3.6.2.1, Air Quality Regulatory Setting, for a more complete description of each policy.

- California Clean Air Act
- Idling Limit Regulation
- Airborne Toxic Control Measure
- State Tailpipe Emission Standards
- State NO_X Reduction Program

4.8.1.1.3 Local

The following state policies or agencies related to air quality and climate change may apply to the implementation of the CHP Academy EIP. Please see Section 3.6.2.1, Regulatory Setting, for a more complete description of each policy.

- Yolo-Solano Air Quality Management District
- Sacramento Metropolitan Air Quality Management District

4.8.1.2 Climate Change Regulatory Setting

4.8.1.2.1 Federal

The following Federal policies related to climate change may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.6.2.2, Climate Change Regulatory Setting, for a more complete description of each policy.

- Mandatory Greenhouse Gas Reporting Rule
- Environmental Protection Agency Endangerment cause and Contribute Findings

4.8.1.2.2 State

The following state policies or agencies related to climate change may apply to the implementation of the CHP Academy EIP. Please see Section 3.6.2.2, Climate Change Regulatory Setting, for a more complete description of each policy.

- Executive Order S-3-05
- Assembly Bill 32, California Climate Solutions Act of 2006
- Senate Bill 97
- Actions Taken by California Attorney General's Office
- California Air Pollution Control Officers Association Guidance
- Executive Order S-13-08

4.8.1.3 Air Quality Environmental Setting

The environmental setting for the CHP Academy EIP is described in the Program Area Affected Environment. The following provides a summary of air quality and climate change information relevant to air quality in the proposed CHP Academy EIP project area.

4.8.1.3.1 Study Area

The study area is in Yolo County, which is located in the Sacramento Valley Air Basin (SVAB). The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and parts of Solano and Placer Counties. The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada, and on the west by the Coast Range.

4.8.1.3.2 Background Information on Air Pollutants

Air quality studies generally focus on five pollutants most commonly measured and regulated, and referred to as criteria air pollutants: ozone, CO, inhalable PM (PM10 and PM2.5), NO_2, and SO_2. Because ozone, a photochemical oxidant, is not emitted into the air directly from sources, emissions of ozone precursors, including NO_X and ROG, are regulated with the aim of reducing ozone formation in the lowermost region of the troposphere.

Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale: NO_2 reacts photochemically with ROG to form ozone, and this reaction

occurs at some distance downwind of the source of pollutants. Pollutants such as CO, PM10, and PM2.5 are considered to be local pollutants because they tend to disperse rapidly with distance from the source.

The principal characteristics surrounding these pollutants and TACs and GHGs are discussed in Section 3.6.2.2.2, Background Information on Air Pollutants.

4.8.1.3.3 Air Quality Attainment Status

The air quality attainment status for criteria pollutants in Yolo County and Sacramento County are summarized in Table 4.8-1. Areas are classified as in attainment or in non-attainment with respect to CAAQS and NAAQS. These classifications are made by comparing actual monitored air pollutant concentrations to state and Federal standards. If a pollutant concentration is lower than the state or Federal standard, the area is considered to be in attainment of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a non-attainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. This typically occurs in non-urbanized areas, where pollutant levels may be less closely monitored.

On December 22, 2008, EPA classified Yolo County as a partial non-attainment area for the PM2.5 standard. With the new designation, an attainment plan will be submitted to EPA by 2012.

Table 4.8-1. Yolo County and Sacramento County Air Quality Attainment Status

Pollutant	Averaging Time	State Standards	National Standards
Yolo County			
Ozone	1-Hour	Serious Non-attainment	No Designation
	8-Hour	Non-attainment	Serious Non-attainment
CO		Attainment	Attainment
PM10	24-Hour	Non-attainment	Unclassified
PM2.5	24-Hour	Unclassified	Partial Non-attainment
Sacramento County			
Ozone	1-Hour	Serious Non-attainment	No Designation
	8-Hour	Non-attainment	Serious Non-attainment
CO		Attainment	Attainment
PM10	24-Hour	Non-attainment	Moderate Non-attainment
PM2.5	24-Hour	Non-attainment	Unclassified/Attainment

Source: California Air Resources Board 2009c.

4.8.1.3.4 Sensitive Receptors

Sensitive land uses in the vicinity of the CHP Academy EIP project area are primarily agriculture and public open space. The CHP Academy is the only employer that has facilities that lie within, or adjacent to, the project area. No sensitive land uses are identified within 500 feet of the project site.

4.8.1.4 Climate Change Environmental Setting

The environmental setting for the CHP Academy EIP is described in the Program Area Affected Environment. The following provides a summary of climate change information relevant to the proposed CHP Academy EIP project area.

4.8.1.4.1 Background Information on Climate Change

GHGs are any gasses that absorb infrared radiation in the atmosphere. Increases in these gasses lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the global climate change. The most common GHG is CO_2, which constitutes approximately 84% of all emissions of GHG in California. GHG are global pollutants, unlike criteria air pollutants (such as ozone precursors) and TACs, which are pollutants of regional and local concern.

4.8.1.4.2 California Climate Trends

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California but at different rates. The annual minimum temperature averaged over all of California increased 0.33° F per decade from 1920 to 2003, while the average annual maximum temperature increased 0.1° F per decade (Moser et al. 2009). At the same time the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote et al. 2005; Knowles 2006). These changes have significant implications for water supply, flooding, aquatic ecosystems, energy generation, and recreation throughout the state.

4.8.2 Air Quality Environmental Consequences

This section describes the environmental consequences relating to air quality for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of CHP Academy EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.6.3.3, Effects and Mitigation Measures.

4.8.2.1 Air Quality Assessment Methods

To assist in the determination of effects, various quantitative models are available to predict emissions and particulate matter generation. Two such models are URBEMIS and SacRCEM. While SacRCEM has typically been used for other recent levee improvement projects in the Sacramento Valley, both models have been applied to simulate the project-level air quality effects of the WSLIP. Given the similarity in the architecture of the two models, for ROG, NO_X, and CO_2, the outputs from the two models are very similar and any variance is considered not statistically significant. For PM, the URBEMIS outputs are considered more conservative (meaning the production values are higher) based on the model's internal methods and assumptions for treatment of earthwork. As the project proponent, WSAFCA has selected this more conservative approach to not under-predict potential project effects. URBEMIS further allows application of mitigation measures to fine-tune and predict

quantitative effectiveness of available measures and assist in determining post-mitigation findings. For these reasons, WSAFCA has selected to use the results of URBEMIS for quantitative determination of effects, effect findings, and mitigation efficacy. The results of both models for the WSLIP EIPs are in Appendix E.

Construction-related emissions were estimated using URBEMIS 2007 model (Version 9.2.4), which uses EPA, CARB, and air district emissions factors to estimate emissions from construction activities. Construction emissions (tailpipe emissions and fugitive dust) were modeled using the conceptual construction schedule, phases, and equipment usage based on the most current available project design information.

4.8.2.2 Air Quality Determination of Effects

For this analysis, an effect pertaining to air quality was analyzed based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.). An effect was considered significant if it would:

- conflict with, or obstruct implementation of, the applicable air quality plan;
- violate any air quality standard or substantial contribution to existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area under NAAQS and CAAQS;
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

The appropriate district-recommended emission thresholds as published in their respective CEQA guidance documents also apply to individual projects under their jurisdiction. An air quality effect is considered to be significant if the project's construction emissions would exceed the General Conformity thresholds (see Section 3.6.2.1.1, General Conformity Regulation). For portions of the construction and operational activities that would occur in Yolo County, an air quality effect is considered to be significant if the air pollutant emissions would exceed YSAQMD's thresholds of significance as shown in Table 3.6-2 (see Section 3.6.2.1, Regulatory Setting). For portions of the construction activities that would occur in Sacramento County (i.e., haul trucks and commute vehicles traveling on public roads in the County), an air quality effect is considered to be significant if the air pollutant emissions would exceed SMAQMD's thresholds of significance as shown in Table 3.6-3 (see Section 3.6.2.1, Regulatory Setting).

4.8.3 Air Quality Effects and Mitigation Measures

4.8.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. Current levee operations and maintenance activities would continue, but there would be no construction-related emissions from program implementation or maintenance.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Air Quality program analysis (Section 3.6.3.3.1). In summary, those effects on air quality could include emission of pollutants in excess of air quality standards, increase in GHG emission, and exposure of sensitive receptors to toxic air emissions as a result of flood-fighting activities. These effects could occur for days, weeks or even months. These effects could be considered significant; however, the timing, duration, and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible

4.8.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the effects on air quality as outlined in the summary table provided after construction phases and duration information on air quality and climate change. A description of these effects is provided below the summary table.

Construction phases, duration, and activities for CHP Academy APA are listed in Table 4.8-2. As described in Chapter 2, Alternatives, construction of the proposed project is anticipated to take place in 2011 and would be completed during the typical construction season. For the air quality effect analysis, it is assumed that the construction work would occur progressively by phases. For each construction phase, construction equipment uses at the site, exported spoils, and imported materials are provided by the project engineers and summarized in Table 4.8-2. Detailed operation hours and horsepower ratings of construction equipment used for each construction phase and URBEMIS model results are included in Appendix E.

Table 4.8-2. Construction Phases, Schedule, and Activities: CHP Academy APA

Phase	Duration (days)	Area (acres)	Excavated Spoils (cy)	Import Material (cy)	Construction Equipment
Flood Control					
Clearing and grubbing	9	14.3	20,266	–	12 dump trucks, 2 bulldozers, 1 excavator
Concrete removal	7	1.9	1,018	–	4 dump trucks, 1 loader, 2 excavators
Levee degrade and slope flattening	26	4.3	59,374	–	12 dump trucks, 1 bulldozer, 1 excavator
Slurry wall construction	29	–	29,260	500	2 dump trucks, 1 loader, 1 bulldozer, 1 long reach track hoe, 1 rough terrain forklifts
Fill placement	27	4.3	–	79,600	14 dump trucks, 4 bulldozers, 1 excavator, 2 sheepsfoot compactors, 2 maintainers, 1 water truck
Concrete placement	24	1.9	–	1,018	5 concrete trucks, 1 crane

Phase	Duration (days)	Area (acres)	Excavated Spoils (cy)	Import Material (cy)	Construction Equipment
Recreation					
Grading	8	1.7	–	–	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck
Install pathways and signs	12	1.3	–	1,850	1 dump truck, 1 asphalt paver, 1 asphalt sealer, 1 striping truck, 1 small front loader, 1 skid steer loader, 1 small roller

cy = cubic yards.

Based on the construction activities described above, construction-related emissions were estimated using the URBEMIS 2007 model. It is anticipated that on-site equipment operations would generate the highest daily diesel exhaust and site earthmoving activities would result in the highest daily fugitive dust generation. The estimated construction emissions are shown in Table 4.8-3. To comply with YSAQMD, SMAQMD, and General Conformity thresholds, annual emissions are estimated for ROG, NOX, CO, PM10, and PM2.5 and the maximum daily emission is estimated for NOX and PM10. It is assumed that half of delivery trucks and construction workers would come from the YSAQMD and the other half of trucks and commute vehicles would come from the SMAQMD. Detailed construction emissions for each construction phase are summarized in Appendix E.

Table 4.8-3. Estimated Construction Emissions: CHP Academy APA

Construction Emissions	ROG (tons/year)	NO_X (lbs/day)	NO_X (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project Construction without Mitigations								
Project-wide								
Maximum daily emissions	–	371	–	–	369	–	–	–
Total annual Emissions	1.2	–	11.1	4.2	–	13.9	3.2	1,290
Within YSAQMD								
Maximum daily emissions	–	325	–	–	367	–	–	–
Total annual Emissions	1.1	–	9.8	3.6	–	13.8	3.2	1,115
Within SMAQMD								
Maximum daily emissions	–	46	–	–	2	–	–	–
Total annual emissions	0.1	–	1.3	0.6	–	0.1	0.1	174
Project Construction with Mitigations								
Project-wide								
Maximum daily emissions	–	253	–	–	45	–	–	–
Total annual emissions	1.2	–	7.5	4.2	–	3.1	0.8	1,290
Within YSAQMD								
Maximum daily emissions	–	207	–	–	43	–	–	–
Total annual emissions	1.1	–	6.2	3.6	–	3	0.7	1,115
Within SMAQMD								
Maximum daily emissions	–	46	–	–	2	–	–	–
Total annual emissions	0.1	–	1.3	0.6	–	0.1	0.1	174
Construction Thresholds								
Federal General Conformity (Project-wide emissions)	50	–	50	–	–	100	100	–
YSAQMD (Emissions in YSAQMD)	10	–	10	–	80	–	–	–
SMAQMD (Emissions in SMAQMD)	–	85	–	–	–	–	–	–

Effect	Finding	With Mitigation	Mitigation Measure
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	Less than significant to significant and unavoidable	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 or PM 2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A

As described in Chapter 2, Alternatives, in order to complete the project before the flood season, the contractors would be allowed to construct on a 24/7 work schedule. Depending on the daily construction activities, the 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the estimated emissions shown in Table 4.8-3, which are based on the standard construction schedule (10 hours per day and 5 days per week). The annual emissions for ROG, NO_X, CO, PM10, and PM2.5 would be the same for both the standard schedule and the 24/7 schedule because the project would be completed in 2011 under either schedule.

Effect AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan

A project is deemed inconsistent with an air quality plan if it would result in population or employment growth that exceeds the growth estimates in the applicable air quality plan—thus generating emissions not accounted for in the applicable air quality plan emissions budget. Consequently, proposed programs need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rate included in the relevant air quality plan.

As described in Chapter 6, Growth-Inducing and Cumulative Effects, the implementation of the overall WSLIP (including this project) might remove an obstacle for undeveloped lands in West Sacramento and make development easier or more attractive for these lands, which might result in population growth in these areas in the long term. The City is currently in the process of updating its 1994 General Plan. It is expected that the new General Plan will include the land use changes in these areas. Additionally, the 2035 Metropolitan Transportation Plan (Sacramento Area Council of Government 2008) has included the population projection of 278,786 people for Yolo County and

87,402 people for West Sacramento, which has accounted for the land development and population growth of these areas through 2035. The air quality conformity analysis as part of the 2035 Metropolitan Transportation Plan meets the emission conformity test for the Sacramento ozone non-attainment area. Therefore, the overall WSLIP and this project would not conflict with or obstruct the implementation of air quality plans. This effect would be less than significant. No mitigation is required.

Effect AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds

Without mitigation, construction-related emissions under the CHP Academy APA would exceed YSAQMD's emission thresholds for NO_X and PM10 and would result in a significant effect. Mitigation measures for this effect are AQ-MM-1 to AQ-MM-3, described below. Table 4.8-3 shows the NO_X and PM10 emissions with these mitigation measures. After mitigation, the NO_X and PM10 emissions would be less than YSAQMD's significance thresholds.

The 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the standard schedule, depending on the daily construction activities. The implementation of AQ-MM-2, which includes all applicable and feasible fugitive dust control measures required by YSAQMD, would reduce PM10 emissions below the YSAQMD's significance threshold. The implementation of AQ-MM-4, which includes the NO_X mitigation fee required by the SMAQMD, would reduce NO_X emissions below the SMAQMD's significance threshold.

It is possible the CHP Academy EIP could be constructed simultaneously with The Rivers EIP. Depending on whether the APA or Alternative B for each project is constructed at the same time, it is possible the combined emissions from the simultaneous projects could exceed the annual average YSCAQMD threshold for NO_X and/or the maximum daily SMAQMD threshold for NO_X. In either case, mitigation measure AQ-MM-1 would be implemented. SMAQMD's requirement for NO_X offset purchases would reduce the impact in Sacramento County to less than significant. However, YSAQMD does not require purchase of offsets, so after implementation of the mitigation measure the impact of simultaneous projects could still be significant and unavoidable in Yolo County.

Mitigation Measures

Mitigation Measure AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds

Unmitigated NO_X and ROG emissions from construction equipment tailpipes could potentially exceed the YSAQMD CEQA thresholds. Therefore, WSAFCA will require the construction contractor to implement feasible and reasonable measures to reduce public nuisance and tailpipe emissions from diesel-powered construction equipment. This requirement will be incorporated into the construction contracts.

Depending on the exceedance amounts of NO_X and ROG emissions, the WSAFCA will require the construction contractor to implement either or both of the following mitigation options.

Mitigation Measure AQ-MM-1a

According to the YSAQMD guidelines (Yolo-Solano Air Quality Management District 2007), the project lead agency is encouraged to explore and incorporate mitigation measures as technology advances and less emissive products become available at lower costs.

The measures recommended by the YSAQMD are listed below.

- Reduce use, trips, and unnecessary idling of heavy equipment. Shut down idling equipment that is not used for more than 5 consecutive minutes as required by California law.
- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Use a modern equipment fleet meeting CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.
- Install emission control devices on older equipment to reduce CO, ROG, and NO_X emissions to levels equivalent to CARB's 1996 or newer certification standard.
- Locate stationary diesel-powered equipment and haul truck staging areas as far as practicable from sensitive receptors.
- Use existing power sources (e.g., power lines) or clean fuel generators rather than conventional diesel generators, when feasible
- Substitute gasoline-powered for diesel-powered equipment when feasible.
- Use reformulated and emulsified diesel fuels where feasible.
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Use aqueous diesel fuel where feasible.
- Use CARB and/or EPA-verified particulate traps and other appropriate controls (i.e. diesel oxidation catalyst or diesel particular filters) where feasible to reduce emissions of NO_X, diesel particulate, and other pollutants at the construction site.

Mitigation Measure AQ-MM-1b

In addition to above measures, the construction contractor could provide a plan, for approval by WSAFCA and YSAQMD, demonstrating that the heavy-duty off-road equipment to be used at the project sites, including owned, leased, and subcontractor equipment, will achieve a project-wide fleet-average reduction of 20% for NO_X and 45% for diesel particulate, compared to the most recent CARB fleet average at time of construction. A construction mitigation calculator may be downloaded from the SMAQMD web site to perform the fleet average evaluation (Sacramento Metropolitan Air Quality Management District 2009).

Mitigation Measure AQ-MM-2: Implement Fugitive Dust Control Plan if Unmitigated Emissions Exceed PM10 or PM 2.5 Thresholds

The construction contractor will implement all applicable and feasible fugitive dust control measures required by YSAQMD including those listed below. This requirement will be incorporated into the construction contract.

- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person would respond and take corrective action within 48 hours. The phone number of YSAQMD also will be visible to ensure compliance with the YSAQMD Rule 2.5, Nuisance.
- Water active unpaved areas at all construction sites at least twice daily in dry conditions, with the frequency of watering based on the type of operation, soil, and wind exposure.

- Prohibit all grading activities and water all areas of disturbed soil under windy conditions (more than 20 miles per hour).
- Limit on-site vehicles to a speed that prevents visible dust emissions to extend beyond unpaved roads.
- Cover all trucks hauling dirt, sand, or loose materials.
- Cover active and inactive storage piles where appropriate.
- Cover or hydroseed unpaved areas that will remain inactive for extended periods.
- Apply soil stabilizers to active and inactive areas where appropriate.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Sweep streets if visible soil material is carried out from the construction site.
- Install wind fencing and phase grading operations where appropriate.

Fugitive dust emissions from the construction of the project would be reduced to a less-than-significant level with the implementation of above mitigation.

Mitigation Measure AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents

WSAFCA will provide advance written notification of the proposed construction activities to all residences and other air quality-sensitive uses within 500 feet of the construction site. Notification will include a brief overview of the proposed project and its purpose, as well as the proposed construction activities and schedule. It will also include the name and contact information of WSAFCA's project manager or a representative for ensuring that reasonable measures are implemented to address the problem.

Mitigation Measure AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions

It is possible that on-road construction emissions, for vehicles traveling within the Sacramento County, could exceed the SMAQMD NO_X threshold. If on-road construction emissions exceed SMAQMD threshold levels, WSAFCA will be required to pay an offsite mitigation fee. Prior to the approval of project plans or the issuance of grading permits, the WSAFCA will submit proof that the offsite air quality mitigation fee of $16,000 per ton of NO_X has been paid to SMAQMD and that the construction air quality mitigation plan has been approved by SMAQMD and the lead agency. SMAQMD already has enacted a well-defined program to use NO_x offset fees received from applicants to fund regional NO_x emission reduction projects. Therefore, with the implementation of this mitigation, the air quality impact to SMAQMD would be reduced to a less-than-significant level.

Effect AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10

After the project is constructed, the facilities will be generally maintained as needed. Maintenance work would be less extensive and would take place over a few days per year. In addition, maintenance and operational activities are part of the existing environmental baseline and thus would not create a substantial source of new emissions. This effect would be less than significant. No mitigation is required.

Effect AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions

Construction of the proposed project would result in short-term diesel exhaust emissions from on-site heavy duty equipment. Particulate exhaust emissions from diesel-fueled engines (DPM) were identified as a TAC by CARB in 1998. Construction of the project would result in the generation of DPM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities.

The assessment of health risks associated with exposure to diesel exhaust typically is associated with chronic exposure, in which a 70-year exposure period is often assumed. However, while cancer can result from exposure periods of less than 70 years, acute exposure periods (i.e., exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in an increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposures periods that are chronic. Construction of the project is not expected to take place at the same construction site for more than 1 to 2 years and would be expected to use a limited number of pieces of heavy equipment at the same construction site.

Furthermore, as required by CARB regulation, no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. In addition, implementation of Mitigation Measure AQ-MM-1 would further reduce exhaust emissions during construction. With implementation of mitigation measures and best management practices, the effect would be reduced to less than significant and no further mitigation is required.

Effect AQ-5: Exposure to Objectionable Odors from Diesel Exhaust

The proposed project would not result in any major sources of odor, nor would it involve operation of any of the common types of facilities that are known to produce odors (e.g., landfill, wastewater treatment facility). In addition, odors associated with diesel exhaust from the use of on-site construction equipment would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.

Furthermore, as required by CARB regulation, no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. Implementation of Mitigation Measures AQ-MM-1 and AQ-MM-3 would further reduce exhaust emissions during construction. This effect would be less than significant. No mitigation is required.

4.8.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on air quality. A description of these effects is provided below the summary table.

Table 4.8-4 summarizes the construction phases, duration, and activities for CHP Academy Alternative B. As described in Chapter 2, Alternatives, construction of the proposed project is anticipated to take place in 20110 and would be completed during the typical construction season. For the air quality effect analysis, it is assumed that the construction work would occur progressively by phases. For each construction phase, construction equipment uses at the site, exported spoils, and imported materials are provided by the project engineers and summarized in Table 4.8-4. Detailed operation hours and horsepower ratings of construction equipment used for each construction phase are included in Appendix E.

As described in Chapter 2, Alternatives, in order to complete the project before the flood season, the contractors would be allow to construct on a 24/7 work schedule. Depending on the daily construction activities, the 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the estimated emissions shown in Table 4.8-4, which are based on the standard construction schedule (10 hours per day and 5 days per week). The annual emissions for ROG, NO_X, CO, PM10, and PM2.5 would be the same for both the standard schedule and the 24/7 schedule because the project would be completed in 2011 under either schedule.

Table 4.8-4. Construction Phases, Activities, Schedule, and Equipment: CHP Academy Alternative B

Phase	Duration (days)	Area (acres)	Excavated Spoils (cy)	Import Material (cy)	Construction Equipment
Flood Control Alternative					
Clearing and grubbing	4	3.07	8,865	–	12 dump trucks, 2 bulldozers, 1 excavator
Excavate stability berm	5	1.48	11,054	–	4 dump trucks, 2 bulldozers, 1 excavator
Install stability berm and drain system	31	1.48	–	7,065	11 dump trucks, 2 bulldozers, 1 excavator, 1 sheepsfoot compactor, 1 maintainer, 1 water truck
Install relief wells	22	1.59	–	500	1 drill rig, 1 crane
Recreation Alternative					
Grading	8	1.7	–	–	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck
Install pathways and signs	12	1.3	–	1,850	1 dump truck, 1 asphalt paver, 1 asphalt sealer, 1 striping truck, 1 small front loader, 1 skid steer loader, 1 small roller

cy = cubic yards.

Based on the construction activities described above, construction-related emissions were estimated using the URBEMIS 2007 model. The estimated construction emissions are shown in Table 4.8-5. Detailed construction emissions for each construction phase are summarized in Appendix E.

Table 4.8-5. Estimated Construction Emissions: CHP Academy Alternative B

Construction Emissions	ROG (tons/year)	NO_X (lbs/day)	NO_X (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project Construction without Mitigations								
Project-wide								
Maximum daily emissions	–	261	–	–	285	–	–	–
Total annual Emissions	0.5	–	5	1.8	–	5.7	1.3	577
Within YSAQMD								
Maximum daily emissions	–	226	–	–	285	–	–	–
Total annual Emissions	0.5	–	4.8	1.7	–	5.7	1.3	543
Within SMAQMD								
Maximum daily emissions	–	35	–	–	0	–	–	–
Total annual Emissions	0	–	0.2	0.1	–	0	0	34
Project Construction with Mitigations								
Project-wide								
Maximum daily emissions	–	261	–	–	39	–	–	–
Total annual emissions	0.5	–	5	1.8	–	0.8	0.3	577
Within YSAQMD								
Maximum daily emissions	–	226	–	–	39	–	–	–
Total annual Emissions	0.5	–	4.8	1.7	–	0.8	0.3	543
Within SMAQMD								
Maximum daily emissions	–	35	–	–	0	–	–	–
Total annual Emissions	0	–	0.2	0.1	–	0	0	34
Construction Thresholds								
Federal General Conformity (Project-wide emissions)	50	–	50	–	–	100	100	–
YSAQMD (Emissions in YSAQMD)	10		10	–	80		–	–
SMAQMD (Emissions in SMAQMD)	–	85	–	–	–	–	–	–

Effect	Finding	With Mitigation	Mitigation Measure
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	Less than significant – Significant and unavoidable	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 or PM2.5Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A

Effect AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan

This effect is the same as described above under the CHP Academy APA. The effect is considered less than significant. No mitigation is required.

Effect AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds

Without mitigation, construction-related emissions under the CHP Academy Alternative B may exceed YSAQMD's emission threshold for PM10 and would result in a significant effect. Mitigation measures for this effect are AQ-MM-2 and AQ-MM-3, described above under the CHP APA. Table 4.8-5 shows the mitigated PM10 emissions with the above fugitive dust control measures. After mitigation, the controlled PM10 emissions would be less than YSAQMD's 80 pounds/day significance threshold.

The 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the standard schedule, depending on the daily construction activities. The implementation of AQ-MM-2, which includes all applicable and feasible fugitive dust control measures required by YSAQMD, will reduce PM10 emissions below the YSAQMD's significance threshold. The implementation of AQ-MM-4, described above under CHP Academy APA, which includes the NO_X mitigation fee required by the SMAQMD, would reduce NO_X emissions below the SMAQMD's significance threshold.

It is possible the CHP Academy EIP could be constructed simultaneously with The Rivers EIP. Depending on whether the APA or Alternative B for each project is constructed at the same time, it is possible the combined emissions from the simultaneous projects could exceed the annual average

YSCAQMD threshold for NO_X and/or the maximum daily SMAQMD threshold for NO_X. In either case, mitigation measure AQ-MM-1 would be implemented. SMAQMD's requirement for NO_X offset purchases would reduce the impact in Sacramento County to less than significant. However, YSAQMD does not require purchase of offsets, so after implementation of the mitigation measure the impact of simultaneous projects could still be significant and unavoidable in Yolo County.

Effect AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10

This effect is the same as described above under the CHP Academy APA. The effect is considered less than significant. No mitigation is required.

Effect AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions

This effect is the same as described above under the CHP Academy APA. The effect is considered less than significant. No mitigation is required.

Effect AQ-5: Exposure to Objectionable Odors from Diesel Exhaust

This effect is the same as described above under the CHP Academy APA. The effect is considered less than significant. No mitigation is required.

4.8.4 Climate Change Environmental Consequences

This section describes the environmental consequences relating to climate change for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of CHP Academy EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section3.6.3.6, Effects and Mitigation Measures.

4.8.4.1 Climate Change Assessment Methods

Almost all increased GHG emissions associated with the proposed project would be generated by construction-related activities. Therefore, the focus of the GHG analysis is to evaluate construction-related emissions. The principal source of GHG associated with would be temporary tailpipe emissions from construction equipment and haul trucks; the principal GHG produced would be CO_2. No air district in California, including YSAQMD, has formally adopted a significant threshold for analyzing GHG or CO_2 emissions generated by a proposed project or a methodology for analyzing air quality effects related to global warming. However, CARB and the major air quality agencies in the state (Bay Area Air Quality Management District [BAAQMD], South Coast Air Quality Management District [SCAQMD] and San Joaquin Valley Air Pollution Control District [SJVAPCD]) have published draft thresholds for defining the significance of GHG emissions from construction projects and operational projects. Those draft thresholds and mitigation measures were utilized in the analysis of effects related to climate change.

To assist in the determination of effects, various quantitative models are available to predict emissions; URBEMIS and SacREM. As described in Section 3.6.3.1, Air Quality Assessment Methods,

those two models were utilized for quantitative determination of effects, effect findings, and mitigation efficacy.

4.8.4.2 Climate Change Determination of Effects

For this analysis, an effect pertaining to air quality was analyzed based on professional practice, draft NEPA Guidance published by CEQ, and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.). An effect was considered significant if it would:

- generate GHG emission that may have a significant impact on the environment;
- conflict with an applicable plan adopted for the purpose of reducing GHG emissions.

4.8.5 Climate Change Effects and Mitigation Measures

4.8.5.1 No Action Alternative

The No Action Alternative is the same as that described above in Section 4.8.2.4. Air Quality No Action.

4.8.5.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the effects on climate change as outlined in the summary table provided. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A

Effect CC-1: Increase in Greenhouse Gas Emissions during Construction

Both SMAQMD and YSAQMD have not formally adopted GHG thresholds for projects such as the CHP Academy EIP. Therefore, a presumptive threshold of 7,000 metric tons (the lowest threshold of any formally adopted GHG threshold) is compared against the CO_2 emissions for the CHP Academy EIP. As noted in Table 4.8-3, the CO_2 emissions project-wide without mitigation would be 1,290 metric tons per year. Within YSAQMD and SMAQMD, respectively, CO_2

emissions without mitigation would be 1,115 and 174 metric tons per year. These emissions are well below the presumptive threshold and the effects of GHG emissions during construction are considered less than significant.

Effect CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The CHP Academy APA does not pose any apparent conflict with the goals of AB 32, the key elements and GHG reduction measures in the Climate Change Scoping Plan, or any other plans for reduction or mitigation of GHGs. To date, no federal, state, or local agency with jurisdiction over the proposed project has adopted plans or regulations that set specific goals for emission limits or emission reductions applicable to the proposed levee improvement project. As described in Effect CC-1, the average forecast emissions from the implementation of the proposed project were compared to conservatively low presumptive significance thresholds that were derived from the draft GHG guidelines published by several local air quality agencies. The forecast emission rates are well below the presumptive significant threshold. Therefore, the proposed project would not conflict with or obstruct the implementation of greenhouse gas emission reduction plans. This effect is less than significant.

Effect CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change

Global climate change could affect the hydrology of the Sacramento River, including the frequency of future flood events and the intensity of future flood events. As described in Section 3.2, Flood Control and Geomorphology, Projections of Future Mean Sea Level Change (p.3.2-51), the entire WSLIP program area (including the Sacramento Bypass) is relatively insensitive to the projected changes in sea level rise. This effect is less than significant.

4.8.5.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on climate change. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A

Effect CC-1: Increase in Greenhouse Gas Emissions during Construction

Both SMAQMD and YSAQMD have not formally adopted GHG thresholds for projects such as the CHP Academy EIP. Therefore, a presumptive threshold of 7,000 metric tons (the lowest threshold of any formally adopted GHG threshold) is compared against the CO_2 emissions for the CHP Academy EIP. As noted in Table 4.8-5, the CO_2 emissions project-wide without mitigation would be 577 metric tons per year. Within YSAQMD and SMAQMD, respectively, CO_2 emissions without mitigation would be 543 and 34 metric tons per year. These emissions are well below the presumptive threshold and the effects of GHG emissions during construction are considered less than significant.

Effect CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

This effect is the same as described above under the CHP Academy APA. The effect is considered less than significant. No mitigation is required.

Effect CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change

This effect is the same as described above under the CHP Academy APA. The effect is considered less than significant. No mitigation is required.

Section 4.9
Noise—
CHP Academy Early Implementation Project

4.9.1 Affected Environment

This section describes the affected environment for noise in the CHP Academy EIP project area, including the regulatory and environmental settings.

4.9.1.1 Regulatory Setting

4.9.1.1.1 State

There are no state policies related to noise that would apply to the implementation of the CHP Academy EIP. However, the *General Plan Guidelines* published by the Governor's Office of Planning and Research (2003) include recommendations for maximum noise exposure based on type of land use. These recommendations are available for counties and cities to adopt as part of their state-mandated requirement in establishing policies and standards in their general plans regarding incompatibilities between land uses as they relate to noise exposure.

There are no applicable Federal, state, or local quantitatively-defined regulations relating to vibration resulting from construction activities. Thresholds for annoyance and structural damage reported by Caltrans (2004) are used in this analysis. Please see the program information in Section 3.7.2.2, Regulatory Setting, for a more complete description of these thresholds.

4.9.1.1.2 Local

The following local policies related to noise may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.7.2.2, Regulatory Setting, for a more complete description of each policy.

- City of West Sacramento Noise Ordinance
- City of Sacramento Noise Ordinance
- *City of West Sacramento General Plan*
- *Yolo County General Plan*
- *City of Sacramento General Plan*

4.9.1.2 Environmental Setting

The environmental setting for the CHP Academy EIP is described in the Program Area Affected Environment. This section presents additional setting information specifically related to noise for the CHP Academy EIP project area.

Noise-sensitive land uses in the vicinity of the project area are primarily residential uses located across the Sacramento River in the City of Sacramento, with the closest residences located on

Garden Highway within 900 feet of the east terminus of the levee reach and 1,900 feet from the staging/mixing area. In addition, the CHP Academy, located south of the reach in the city of West Sacramento, would be considered noise-sensitive at buildings where cadets are housed (during nighttime hours) or trained (during daytime hours). The closest noise-sensitive CHP Academy dormitory building is located at a distance of approximately 1,500 feet south of the levee reach and 1,700 feet south of the staging/mixing area.

The primary existing noise sources in the vicinity of the proposed project are vehicular traffic on I-80 and local roadways. Secondary noise sources include boating traffic on the Sacramento River, agricultural and industrial operations, and airplane and helicopter flyovers (to and from the CHP Academy and regional airports and facilities).

I-80 is the dominant noise source in the area, and existing noise levels in the vicinity of the proposed project depend on relative distance from this freeway. Traffic noise levels in the vicinity of I-80 were calculated at various distances using the existing traffic volumes (California Department of Transportation 2007) and the Federal Highway Administration (FHWA) Traffic Noise Model (Version 2.5). Table 4.9-1 summarizes the results of modeling. Estimated peak-hour daytime traffic noise levels at the noise-sensitive receptors nearest the levee reach are 63 to 64 dBA. Nighttime noise levels near major freeways are typically 10 to 15 dBA quieter than the peak-hour daytime levels, so the estimated nighttime noise levels at the closest noise-sensitive receptors are likely 48 to 54 dBA.

Table 4.9-1. Modeled Peak Hour Traffic Noise Levels in the Vicinity of the CHP Academy Site

Distance from Interstate 80 (feet)	Noise-Sensitive Receptor	Peak Hour Daytime Traffic Noise L_{eq} (dBA)	Estimated Nighttime L_{eq} (dBA)
2,000	City of Sacramento homes closest to levee reach	64	49–54
2,200	CHP buildings closest to levee reach	63	48–53

4.9.2 Environmental Consequences

This section describes the environmental consequences relating to noise for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of CHP Academy EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.7.3.3, Effects and Mitigation Measures.

4.9.2.1 Assessment Methods

This analysis focuses on the potential construction-related and operational noise effects associated with the CHP Academy EIP project. Methods recommended by the Federal Transit Administration have been used to assess construction noise. Potential noise effects associated with construction activities have been evaluated by assuming the simultaneous operation of multiple pieces of heavy equipment as a reasonable upper bound for noise effects.

Temporary groundborne vibration from construction activity has also been assessed using methods recommended by the Federal Transit Administration (2006).

4.9.2.2 Determination of Effects

Determination of effects for noise and vibration for the CHP Academy EIP is the same as under the Program Area Environmental Consequences.

It is possible that construction activity for levee improvements might have to be conducted at night to respond to expedited schedule requirements. Therefore, the noise analyses described in this section assumes the project must comply with nighttime noise ordinance limits for the two local jurisdictions:

- CHP Academy dormitories within the city of West Sacramento: 45 dBA (L_{eq}); 65 dBA (L_{max})
- City of Sacramento dwellings: 54 dBA (L_{eq}); 70 dBA (L_{max})

The CHP Academy EIP would require the use of heavy construction equipment. Table 4.9-2 summarizes typical construction noise emission levels for the types of equipment proposed for use.

Table 4.9-2. Typical Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (L_{max})[1]	Equipment	Typical Noise Level (L_{max})[1]
Backhoe	78	Grader	85
Batch mixing plant	83	Haul truck[2]	76
Compactor	83	Maintainer[5]	77
Dozer	82	Paver	77
Dump truck	76	Pickup truck	75
Excavator	81	Roller	80
Forklift[3]	75	Scraper	84
Front-end loader	79	Trackhoe[4]	78
Water truck[2]	76	Water truck[2]	76

Source: Federal Highway Administration 2006.
[1] dBA, A-weighted decibel level, measured at 50 feet.
[2] Based on data for dump truck.
[3] Based on data for pickup truck.
[4] Based on data for backhoe.
[5] Based on data for paver.

4.9.2.2.1 Effect Assumptions

The following assumption regarding project effects on noise in the CHP Academy area has been made for this analysis:

- Vibration from non-impact/impulsive construction equipment typically attenuates below significant levels within about 50 feet of construction activity, and is not anticipated to result in a significant effect during implementation of the project. Therefore, effects from non-impulsive construction equipment are not discussed further in this section.

4.9.3 Effects and Mitigation Measures

4.9.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. Current levee operations and maintenance activities would continue, but there would be no noise or vibration associated with new construction or operational activities.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the magnitude described in the Noise program analysis (Section 3.7.3.3.1). In summary, those effects could include excessive noise and vibration levels for extended periods of time due to flood-fighting and cleanup efforts. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

4.9.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following noise-related effects. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A

Effect NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise

Under the CHP Academy APA, levee deficiency improvements would be constructed along a 6,500-foot-long area of the Sacramento Bypass Levee reach. The CHP Academy APA would include two sequential stages of construction activity: construction of slurry cutoff walls using the conventional slot trench method, and waterside slope flattening. As described in the program analysis, noise levels generated during slope flattening activity would be lower than those generated during slurry wall construction. Therefore, the following noise impact assessment focuses on the louder activity (combined slurry wall and staging/mixing area).

Construction equipment proposed for slurry wall construction would include long-reach trackhoes, dump trucks, haul trucks, loaders, rough-terrain forklifts, compactors, maintainers, and water trucks.

The three loudest pieces of equipment employed during slurry cutoff wall construction would likely be the compactor, dozer and long-reach excavator. The loudest pieces of equipment at the

staging/mixing area would include a loader, a batch mixing plant, and a haul truck. The total noise emissions from the combined slurry wall and staging/mixing area activity would be 89 dBA (L_{max}) at 50 feet and 83 dBA (L_{eq}) at 50 feet.

Table 4.9-3 summarizes noise levels at various distances projected from the simultaneous construction activity for the slurry wall and staging/mixing area. That table compares the modeled L_{max} and L_{eq} noise levels to the nighttime noise ordinance limits at each of the noise sensitive receptors.

Construction equipment proposed for slope flattening includes motor graders, sheepsfoot rollers, haul trucks and water trucks. The three loudest pieces of equipment under this treatment option would be the grader, roller, and large truck (haul or water). The total noise emissions from the slope-flattening construction activity would be 87 dBA (L_{max}) at 50 feet and 82 dBA (L_{eq}) at 50 feet.

Table 4.9-3. Projected Construction Noise Levels due to Slurry Cutoff Wall Installation (Including Staging/Mixing Area)

Distance between Source and Receiver (feet)	Noise Receptor	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)	L_{max} Nighttime Noise Limit (dBA)	L_{eq} Nighttime Noise Limit (dBA)
900	Homes along Garden Highway in City of Sacramento	54	50	701	54[1]
1,600	Closest dormitories at CHP Academy	47	43	65[2]	45[2]

Calculations based on Federal Transit Administration 2006.

[1] Nighttime noise ordinance limit for City of Sacramento.

[2] Nighttime noise ordinance limit for City of West Sacramento.

Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers.

The closest dormitories at the CHP Academy and the closest homes across the river in the city of Sacramento are relatively far from the construction areas, so the modeled noise levels at those receptors would be lower than the respective nighttime noise ordinance limits. Therefore, construction noise effects would not be significant, even if nighttime construction is required.

Similarly, construction-related haul trucks and commute vehicles traveling along public streets are not expected to cause 24-hour day-night (L_{dn}) noise levels exceeding the City's noise limits for transportation noise sources. The highest truck traffic volumes along residential streets would occur along North Harbor Boulevard, where there are single-family and multi-family dwellings along the road. As described in Section 4.7, Transportation and Navigation, temporary construction activity could generate up to 298 haul truck trips per day and 58 worker commute trips per day. If the haul trucks and commute vehicles were used 24 hours per day, project-related traffic noise levels at the existing dwellings along North Harbor Boulevard would be 61 dBA-L_{dn}. That project-related L_{dn} noise level is less than the 65 dBA-L_{dn} limit set by the City's noise ordinance. If haul trucks usage could be restricted to daytime hours, then the resulting L_{dn} noise levels would be lower. Therefore, this impact would be less than significant. No mitigation is required.

Effect NZ-3: Exposure of Sensitive Receptors to Intermittent Noise Due to Ongoing Maintenance Activities and Permanent Facility Operations

There would be no additional ongoing flood control related levee maintenance activities at areas subsequently treated with cutoff wall installations beyond current maintenance activities. Areas treated with slope flattening would be regularly mowed and maintained to control vegetation. Recreation trail maintenance would include sweeping, pavement repair, removal of obstacles, and periodic asphalt overlays. These maintenance activities would not have a significant effect on noise or vibration. Therefore, this effect would be considered less than significant. No mitigation is required.

4.9.3.3 CHP Academy Alternative B

Implementation of the CHP Academy APA would result in the following noise-related effects. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A

Effect NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise

Under CHP Academy Alternative B, levee treatments and construction practices along the Sacramento Bypass reach would consist of two sequential stages of construction activity:

- Stability berm construction using a grader, dozer, and compactor. As described in the program noise analysis, the combined noise emissions from the loudest equipment would be 88 dBA (L_{max}) and 84 dBA (L_{eq}).
- Relief well installation using a drill rig, an excavator, and a water truck. As described in the program noise analysis, the combined noise emissions from the loudest equipment would be 84 dBA (L_{max}) and 81 dBA (L_{eq}).

Construction of the stability berm would generate the loudest noise levels. Therefore, the noise impact assessment focuses on that stage of construction. This assessment assumes that nighttime construction might be required.

Noise sensitive receptors are the same as those considered for the CHP Academy APA: the closest dormitories at the CHP Academy within the City of West Sacramento (1,600 feet from the levee reach); and homes along Garden Highway in the City of Sacramento (900 feet from the eastern terminus of the levee reach). As described previously each of those jurisdictions has its own nighttime noise ordinance limits.

Noise generated by nighttime construction of the stability berm (the loudest activity forecast for Alternative B) was modeled. Table 4.9-4 lists the forecast construction noise levels at each noise sensitive receptor, and compares the forecast values to the respective nighttime noise ordinance limits.

Table 4.9-4. Projected Construction Noise Levels during Alternative B Stability Berm Construction

Distance between Source and Receiver (feet)	Noise Receptor	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)	L_{max} Nighttime Noise Limit (dBA)	L_{eq} Nighttime Noise Limit (dBA)
900	Homes along Garden Highway in City of Sacramento	55	51	70[1]	54[1]
1,600	Closest dormitories at CHP campus	48	44	65[2]	45[2]

Calculations based on Federal Transit Administration 2006.
[1] Nighttime noise ordinance limit for City of Sacramento.
[2] Nighttime noise ordinance limit for City of West Sacramento.
This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers.

Forecast nighttime noise levels generated by the loudest construction activity are less than the nighttime noise ordinance limits. Therefore, noise impacts would be less than significant even if nighttime construction is required.

Similar to the CHP APA, haul trucks and worker commute vehicles traveling along public streets would not cause project-related traffic noise to exceed the City's noise ordinance limits, even if haul trucks were used 24 hours per day. Forecast traffic noise levels for the APA are less than the City's noise ordinance limit, and Alternative B would generate lower traffic volumes than the APA. Therefore, traffic noise generated by Alternative B would also be less than the City noise ordinance limited. This effect would be less than significant. No mitigation is required.

Effect NZ-3: Exposure of Sensitive Receptors to Intermittent Noise Due to Ongoing Maintenance Activities and Permanent Facility Operations

There would be no additional ongoing flood control related levee maintenance activities beyond what is currently undertaken to control vegetation and maintain the existing drainage ditch. Relief well maintenance would include annual inspection and test pumping every 2 years. Recreation trail maintenance would include sweeping, pavement repair, removal of obstacles, and periodic asphalt overlays. These maintenance activities would not have a significant effect on noise or vibration. Therefore, this effect would be considered less than significant. No mitigation is required.

Section 4.10

Vegetation and Wetlands—CHP Academy Early Implementation Project

4.10.1 Affected Environment

This section describes the affected environment for vegetation and wetlands in the CHP Academy EIP project area, including regulatory and environmental setting.

4.10.1.1 Regulatory Setting

4.10.1.1.1 Federal

The following Federal policies related to vegetation and wetlands may apply to implementation of the CHP Academy EIP. Please see Section 3.8.2.1, Regulatory Setting, for a more complete description of each policy.

- Endangered Species Act
- Clean Water Act
- Rivers and Harbors Act
- Executive Order 11990: Protection of Wetlands
- Executive Order 13112: Invasive Species

4.10.1.1.2 State

The following state policies related to vegetation and wetlands may apply to implementation of the CHP Academy EIP. Please see Section 3.8.2.1, Regulatory Setting, for a more complete description of each policy.

- California Endangered Species Act
- California Native Plant Protection Act
- California Fish and Game Code
- Porter-Cologne Water Quality Control Act

4.10.1.1.3 Local

The following local policies related to vegetation and wetlands may apply to implementation of the CHP Academy EIP. Please see Section 3.8.2.1, Regulatory Setting, for a more complete description of each policy.

- *Yolo County General Plan*
- *Yolo County Oak Woodland Conservation and Enhancement Plan*
- *City of West Sacramento General Plan*
- *City of West Sacramento Tree Preservation Ordinance*

4.10.1.2 Environmental Setting

This section discusses the environmental setting related to vegetation and wetlands in the CHP Academy EIP project area.

4.10.1.2.1 Study Area

For the purposes of this section, the CHP Academy EIP study area consists of the project disturbance footprint plus an additional 100-foot-wide buffer zone to support an assessment of potential indirect effects. The width of the buffer zone was selected to account for indirect effects on elderberry shrubs (*Sambucus mexicana*) that are the host plant for the federally threatened valley elderberry longhorn beetle (VELB), which is discussed in Section 3.10, Wildlife. The study area occurs within the Great Central Valley subdivision of the California Floristic Province in Yolo County (Hickman 1993: 44, 45) and encompasses a portion of the Sacramento Bypass Levee near the CHP Academy. The majority of the study area consists of the levee itself. The levee crown and the eastern portion of the levee slope adjacent to the bypass are paved. The levee slope facing the CHP Academy and the western portion of the levee slope adjacent to the bypass support ruderal annual grassland. Additionally, an unpaved road is located approximately halfway down the levee slope adjacent to the CHP Academy. The topography of the portions of the study area adjacent to the levees is relatively level and elevations in the study area range from approximately 15 to 36 feet above mean sea level.

4.10.1.2.2 Field Surveys

The methods used to identify vegetation and wetland resources in the study area consisted of a pre-field investigation, reconnaissance-level site visits, a delineation of wetlands and waters, an arborist survey, and a botanical survey. Each of these components is described below.

Pre-Field Investigation

Prior to conducting the reconnaissance-level site visits, an ICF International botanist/wetland ecologist reviewed information pertaining to vegetation and wetland resources in the project region from the sources listed below.

- a CNDDB records search of the USGS 7.5-minute Sacramento West, Sacramento East, Grays Bend, Taylor Monument, Rio Linda, Davis, Clarksburg, Saxon, and Florin quadrangles (California Natural Diversity Database 2009a);
- the USFWS list of endangered, threatened, and proposed species for the U.S. Geological Survey 7.5-minute Sacramento West quadrangle and Yolo County obtained from the USFWS web site (U.S. Fish and Wildlife Service 2009a); and
- the CNPS 2007 online *Inventory of Rare and Endangered Plants of California* (California Native Plant Society 2009a).

No Federal, state, or local regulatory agencies were contacted prior to conducting the pre-field investigation; however, it was not appropriate at that time because the potential for the study area to contain sensitive vegetation and wetland resources could not be completely evaluated without field observations.

Reconnaissance-Level Site Visits

The botanist/wetland ecologist conducted three reconnaissance-level site visits to evaluate existing vegetation and wetland resources in the study area. The field visits were conducted on September 19 and October 5, 2007, and January 9 and February 13, 2009. The purpose of the site visits was to:

- Identify land cover types and compare field observations with existing vegetation data.
- Evaluate whether potential habitat may be present for special-status plant species that have been identified in the project region.
- Identify potential wetlands and other waters of the United States and/or state that these should be delineated during future surveys (see discussion below).
- Identify trees that may potentially be protected under the City of West Sacramento's Tree Preservation Ordinance.
- Identify invasive plant species present in the study area.

Delineation of Wetlands and Other Waters

An ICF International soil scientist and a botanist delineated wetlands and other waters of the United States in the study area on December 29, 2008, and March 20 and August 13, 2009. The delineation was conducted to identify the types and locations of wetlands and other waters that may be subject to regulation by Federal (USACE) and/or state (Central Valley RWQCB) agencies. The delineation was conducted in accordance with guidance provided in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987: 53–69), the *Regional Supplement to the Corps of Engineers 1987 Manual: Arid West Region* (U.S. Army Corps of Engineers 2008), and USACE Regulatory Guidance Letter RGL 05-05 (U.S. Army Corps of Engineers 2005). The delineation was conducted to support the submission of a preliminary jurisdictional determination to the USACE Sacramento District and to obtain wastewater discharge requirements from the Central Valley RWQCB for waters of the state.

Arborist Survey

An ICF International arborist conducted tree surveys on December 16 and 17, 2008. The arborist survey methods follow standard professional practices and all tree location data were collected with a global positioning system unit with sub-meter accuracy. The arborist recorded the species, number of trunks, and diameter at breast height (diameter at 4.5 feet above the ground surface, unless otherwise noted, measured with a calibrated diameter-at-breast-height tape), tree height, dripline diameter, and the health and vigor of each tree. At the time of the arborist survey, the boundary of the study area was located approximately 400 feet west of the depressional wetland, so the trees located west of that previous boundary were not surveyed. Arborist surveys of these areas will be completed prior to project implementation.

Botanical Survey

Two ICF International botanists conducted a botanical survey in the study area on April 30, 2009. The botanists walked meandering transects throughout the study area. All plant species observed were identified to the level necessary to determine if they were special-status plants or were plant species with unusual or significant range extensions. The list of all plants observed in the study area is included as Appendix F.

4.10.1.2.3 Land Cover Types

The study area contains the following land cover types: Great Valley mixed riparian forest, non-native annual grassland, depressional wetland, drainage ditch, open water, and levee/developed/landscaped. The Great Valley mixed riparian forest and non-native annual grassland are natural communities identified in DFG's List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database (California Department of Fish and Game 2003). The depressional wetland was classified using the hydrogeomorphic approach described by Brinson (1993: 7–9). Each of the land cover types is discussed below and shown in Figure 4.10-1.

Great Valley Mixed Riparian Forest

Great Valley mixed riparian forest surrounds the depressional wetland and pond within the Sacramento Bypass (Figure 4.10-1). The study area contains a total of 1.16 acres of Great Valley mixed riparian forest and only 0.03 acre occurs within the project disturbance footprint. The dominant overstory species are Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), Goodding's black willow (*Salix gooddingii*), and valley oak (*Quercus lobata*). The shrub layer is relatively open and contains small valley oaks, box elder (*Acer negundo* var. *californicum*), and tree tobacco (*Nicotiana glauca*). Representative species observed in the herbaceous understory were mugwort (*Artemisia douglasiana*), rough cocklebur (*Xanthium strumarium*), and cudweed (*Gnaphalium luteo-album*). None of the trees observed in the Great Valley mixed riparian forest met the definition of heritage or landmark trees as defined in the City's Tree Preservation Ordinance. Riparian forest is identified as a sensitive natural community by the CNDDB (California Natural Diversity Database 2009b).

Riparian communities in general are some of the richest community types in terms of structural and biotic diversity of any plant community found in California. Riparian vegetation provides three important functions in addition to that of wildlife habitat: 1) acts as a travel lane between the river and adjacent uplands, providing an important migratory corridor for wildlife; 2) filters out pollutants, thus protecting water quality; and 3) helps to reduce the severity of floods by stabilizing riverbanks.

Despite widespread disturbances resulting from urbanization, agricultural conversion, and grazing, riparian forests remain important wildlife resources because of their scarcity regionally and statewide and because riparian communities are used by a large variety of wildlife species.

Non-Native Annual Grassland

The majority of the non-native annual grassland in the CHP Academy EIP study area occurs within the Sacramento Bypass (Figure 4.10-1). A total of approximately 19.03 acres of non-native annual grassland occur within the study area and approximately 8.29 acres are located within the project disturbance footprint. Rattail fescue (*Vulpia myuros* var. *myuros*) and soft chess (*Bromus hordeaceus*) were the dominant species observed in the non-native annual grassland in the Sacramento Bypass basin, and the dominant forbs observed were perennial pepperweed (*Lepidium latifolium*), winter vetch (*Vicia villosa* ssp. *varia*), and mugwort. Other species observed in the grassland were red brome (*Bromus madritensis* ssp. *rubens*), yellow star-thistle (*Centaurea solstitialis*), foxtail barley (*Hordeum murinum* spp. *leporinum*), perennial pepperweed (*Lepidium latifolium*), and Italian ryegrass (*Lolium multiflorum*). The non-native annual grassland within the Sacramento Bypass basin

contained a high proportion of forb species. A large elderberry shrub (*Sambucus mexicana*) was observed in the non-native annual grassland within the bypass. Narrow swaths of non-native annual grassland that occur on the levee itself were included in the levee/developed/landscaped land cover type described below. In general, the annual grasslands in the study area contain a relatively large proportion of ruderal species, likely as a result of the substantial degree of disturbance from human activities.

Depressional Wetland

A single depressional wetland encompassing 2.91 acres was delineated in the study area (Figure 4.10-1). The depressional wetland is located entirely within the buffer zone component of the study area (i.e., outside the project disturbance footprint). The depressional wetland is located within the Sacramento Bypass basin and appears to receive most of its hydrologic input from groundwater in addition to direct precipitation and surface runoff. The depressional wetland is shaded by the Great Valley mixed riparian forest and does not support emergent marsh vegetation (i.e. cattails [*Typha* sp.] and tules [*Scirpus* sp.]). The depressional wetland was inundated at the time of the delineation of wetlands and waters and at the time of the botanical survey.

The depressional wetland does not provide habitat for the special-status plants known from the project region that occur in vernal pools or marshes because it does not support vernal pool or marsh vegetation and lacks the restrictive hardpan layer that characterizes vernal pools.

Dominant plant species associated with the depressional wetland were weedy species: knotweed (*Polygonum* sp.), Bermuda grass, perennial peppergrass, and rough cocklebur. The depressional wetland is surrounded by Great Valley mixed riparian forest and would be considered a sensitive natural community even though it is not listed on DFG's *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (California Department of Fish and Game 2003) because state and Federal regulatory agencies consider wetlands sensitive habitats.

Drainage Ditch

The study area contains several segments of a drainage ditch that that occurs parallel to the south side of the Sacramento Bypass levee. The drainage ditch appears to be ephemeral and no water was observed during the site visits. The area of the drainage encompassed by the study area is 0.13 acre and the drainage ditch is located entirely in the buffer zone of the study area. The drainage ditch appears to drain upland areas between the CHP Academy and the Sacramento Bypass levee.

Open Water

For the purposes of this analysis, the open water category includes the small pond at the western edge of the study area within the Sacramento Bypass and the canal, which are both located within the buffer zone of the study area. Within the study area, the pond encompasses 0.19 acre and the canal encompasses 0.12 acre. The pond is bordered by Great Valley mixed riparian forest to the north, east, and south and by freshwater marsh to the west. A pipe (approximately 3 feet in diameter) was observed above the water level on the south side of the pond and appears to periodically convey water pumped from the canal into the pond. The unnamed canal is bordered by the CHP Academy on the east and on the west by the levee. A pumping station is located at the north end of the canal. Although small clumps of tules and cattail were observed along the canal edges in the section located in the study area, the channel is essentially unvegetated.



Figure 4.10-1
Land Cover Types in the Study Area at CHP Academy Early Implementation Project Site

Acres

Land Cover Type	Project Area		
	Construction Limit	Staging Area	Total in Study Area
Non-native Annual Grassland	2.22	0.93	12.54
Levee/Developed/ Landscaped	26.06	0.28	42.12
Great Valley Mixed Riparian Forest	0.07	---	1.15
Depressional Wetland	---	---	2.91
Open Water	---	---	.31
Drainage Ditch	---	---	0.13
Total Acreage	28.35	1.21	59.16

Study Area

Construction Limit

Staging Area

Alignment

Paved Bicycle Trail

N

Feet

400 200 0 400

Aerial Photo Source: Aerials Express, 2007

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Levee/Developed/Landscaped

The levee/developed/landscaped land cover type is comprised of the levee itself as well as areas that are developed and/or landscaped (Figure 4.10-1). This land cover type that encompasses approximately 38.692 acres also includes unpaved roads and trails and areas that appear to have been mowed. The levee crown and the eastern portion of the levee slope adjacent to the bypass are paved, and an unpaved road is located approximately halfway down the levee slope adjacent to the CHP Academy. The levee slope facing the CHP Academy and the western portion of the levee slope adjacent to the bypass both support narrow swaths of non-native annual grassland dominated by slender wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), and soft chess. The non-native grassland on the levee slope facing the CHP Academy appears to be periodically mowed as part of routine levee maintenance. The trees observed in the southeastern portion of the study area consist of a mixture of native oak trees (*Quercus* spp.) and species planted for landscaping purposes, e.g., coast redwood (*Sequoia sempervirens*), catalpa (*Catalpa* sp.), and London planetree (*Platanus hybrida*). Several elderberry shrubs were observed between the railroad tracks and Old River Road in the southeastern portion of the study area.

4.10.1.2.4 Waters of the United States, Including Wetlands

The study area contains 3.35 acres of potential waters of the United States consisting of the depressional wetland (2.91 acres), drainage ditch (0.13 acre), pond (0.19 acre), and canal (0.12 acre). Although portions of the Sacramento Bypass basin are inundated (e.g., depressional wetland, pond) and meet the three USACE wetland criteria (i.e., hydrophytic vegetation, hydric soils, & wetland hydrology), areas sampled in the remainder of the portion of the basin located within the study area do not meet all three wetland criteria. In accordance with USACE guidelines for submitting a preliminary jurisdictional determination, these features were interpreted to be subject to USACE regulation under Section 404 of the CWA. This determination is preliminary and subject to verification by the Sacramento District of the USACE as part of the review process. The depressional wetland and the drainage ditch also qualify as waters of the state. The detailed wetland delineation report is being submitted to the USACE as part of the CWA Section 404 permitting process.

4.10.1.2.5 Special-Status Plant Species

Special-status plant species are plants that are legally protected under CESA, ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Categories of special-status plant species are described above in Program Affected Environment.

No special-status plant species occur in the study area based on one or more of the following findings: absence of habitat, absence of suitable microhabitat, and lack of occurrence during site visits. Eighteen of the 34 special-status plant species identified above in the Program Affected Environment were identified as occurring in the project region (California Natural Diversity Database 2009b; California Native Plant Society 2009b; U.S. Fish and Wildlife Service 2009b). The number of special-status plant species identified as having the potential to occur in the program study area differs from the number of special-status plants identified as potentially occurring in the project study area because the project study area encompasses a much smaller area. Four of the eighteen species are federally and/or state-listed as endangered or threatened: palmate-bracted bird's-beak (*Cordylanthus palmatus*), Boggs Lake hedge hyssop (*Gratiola heterosepala*), Colusa grass (*Neostapfia colusana*), and Crampton's tuctoria (*Tuctoria mucronata*). The status, distribution,

habitat requirements, and identification period of the eighteen species are shown in Table 4.10-1. One of the species, little mousetail (*Myosurus minimus* ssp. *apus*), occurs at elevations that are at least 30 feet higher than the highest elevation within the study area. Although the Great Valley mixed riparian forest is potential habitat for northern California black walnut, no protected native stands were observed during any of the site visits.

Five of the remaining sixteen species occur in habitats (i.e., vernal pools, marshes) that are not present in the study area: Bogg's Lake hedge hyssop (*Gratiola heterosepala*), rose-mallow (*Hibiscus lasiocarpus*), legenere (*Legenere limosa*), Colusa grass (*Neostapfia colusana*), and Sanford's arrowhead (*Sagittaria sanfordii*). Although habitat is present in the grassland for eight of the remaining ten species, suitable microhabitat (mesic areas, adobe clay soils, alkaline soils) is not present. No mesic areas were observed during site visits and no alkaline, serpentine, or adobe clay soils have been documented in the three soil mapping units present in the study area: Lang sandy loam, deep; Lang sandy loam, deep, flooded; and Sycamore silt loam (Andrews 1972; 15, 16, 33, 34). Two special-status plant species, stinkbells (*Fritillaria agrestis*) and heartscale (*Atriplex cordulata*) were determined to have low potential to occur in the study area. No special-status plants were observed in the study area during the April 30, 2009 botanical survey that coincided with the identification periods of stinkbells and heartscale (California Native Plant Society 2009b).

The timing of the survey also coincided with the identification period of eight other special-status plant species identified during the pre-field investigation as occurring in the project region (California Native Plant Society 2009b) but for which the project study area lacked suitable habitat or microhabitat. Therefore, the proposed CHP Academy alternatives would not have a significant effect on special-status plants and effects on special-status plants are not discussed further. The closest special-status plant occurrence to the study area is rose-mallow that has been documented approximately 1 mile northeast of the Sacramento River North Levee (California Natural Diversity Database 2009b); however, no suitable habitat (i.e., freshwater marsh) is present in the CHP Academy study area.

Table 4.10-1. Special-Status Plants Identified as Occurring in the Project Region for the CHP Academy EIP

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Identification Period	Potential for Occurrence in CHP Academy Study Area
Ferris's milk vetch *Astragalus tener* var. *ferrisiae*	–/–/1B.1	Historic range included the Central Valley from Butte to Alameda Counties; currently only occurs in Butte and Glenn Counties	Seasonally wet areas in meadows and seeps, sub-alkaline flats in valley and foothill grassland; 16–246 feet	Apr–May	Habitat present in grasslands but no suitable microhabitat (i.e., alkaline flats) is present. No occurrences within 10 mi.
Alkali milk vetch *Astragalus tener* var. *tener*	–/–/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, eastern San Francisco Bay	Playas, on adobe clay in valley and foothill grassland, vernal pools on alkali soils; below 197 feet	Mar–Jun	Habitat present in grasslands but suitable microhabitat (i.e., adobe clay) is not present. Nearest occurrence is ~9 mi. away.
Heartscale *Atriplex cordulata*	–/–/1B.2	Western Central Valley and valleys of adjacent foothills	Saline or alkaline soils in chenopod scrub, meadows and seeps, sandy areas in valley and foothill grassland; below 1,230 feet	Apr–Oct	Habitat present in grasslands and sandy soils occur in the study area, but grasslands are highly disturbed by human activities. No saline or alkaline soils have been documented in the study area. Nearest reported occurrence (extirpated) was ~7.5 mi away.
Brittlescale *Atriplex depressa*	–/–/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools; below 1,050 feet	Apr–Oct	Habitat present in grasslands but no suitable microhabitat (i.e., alkaline soils) is present. Nearest occurrence is ~10 mi. away.
San Joaquin saltscale *Atriplex joaquiniana*	–/–/1B.2	Western edge of the Central Valley from Glenn to Tulare Counties	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 2,739 feet	Apr–Oct	Habitat present in grasslands but no suitable microhabitat (i.e. alkaline soils) is present. Nearest occurrence is ~8 mi. away.

[1] Floristic provinces as defined in Hickman 1993.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Identification Period	Potential for Occurrence in CHP Academy Study Area
Palmate-bracted bird's-beak *Cordylanthus palmatus*	E/E/1B.1	Livermore Valley and scattered locations in the Central Valley from Colusa to Fresno Counties	Alkaline grassland, alkali meadow, chenopod scrub; 16–508 meters	May–Oct	Habitat present in grasslands but no suitable microhabitat (i.e., alkaline soils) is present. Nearest occurrence is ~8 mi. away.
Dwarf downingia *Downingia pusilla*	–/–/2.2	Inner North Coast Ranges, southern Sacramento Valley, northern and central San Joaquin Valley	Mesic areas in valley and foothill grassland, vernal pools; below 1,460 feet	Mar–May	Habitat present in grasslands but no suitable microhabitat (i.e., mesic areas) is present. Nearest occurrence is ~7.5 mi. away.
Stinkbells *Fritillaria agrestis*	–/–/4.2	Outer North Coast Ranges, Sierra Nevada foothills, Central Valley, Central Western California	Clay, sometimes serpentine soils in chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland; 33–5,102 feet	March–June	Habitat present in grassland and clay subsoils may be present at surface from disturbance to study area. Overlap between highest study area elevation (36ft) and elevation range of species (i.e., 36–5,102 feet above mean sea level) is very minimal. Grasslands are highly disturbed from human activities. No serpentine soils occur in the study area. Nearest occurrence is ~8.5 mi. away.
Boggs Lake hedge hyssop *Gratiola heterosepala*	–/E/1B.2	Inner North Coast Ranges, central Sierra Nevada foothills, Sacramento Valley, Modoc Plateau	Marshes and swamps along lake margins, vernal pools on clay soils; 32–7,792 feet	Apr–Aug	No marsh or vernal pool habitat present. Nearest occurrence is ~10 mi. away.
Rose-mallow *Hibiscus lasiocarpos*	–/–/2.2	Central and southern Sacramento Valley, deltaic Central Valley, and elsewhere in the U.S.	Freshwater marsh along rivers and sloughs; below 394 feet	Jun–Sep	No marsh habitat present. Nearest occurrence is ~1 mi. away.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Identification Period	Potential for Occurrence in CHP Academy Study Area
Northern California black walnut *Juglans hindsii*	–/–/1B.1	Last two native stands in Napa and Contra Costa Counties; historically widespread through southern Inner North Coast Ranges, southern Sacramento Valley, northern San Joaquin Valley, San Francisco Bay	Riparian scrub and riparian woodland; below 1,443 feet	Apr–May	Riparian habitat present but no native stands observed during 2007 & 2009 field surveys. Nearest occurrences is ~9 mi. away.
Legenere *Legenere limosa*	–/–/1B.1	Sacramento Valley, North Coast Ranges, northern San Joaquin Valley and Santa Cruz mountains	Vernal pools; below 2,887 feet	Apr–Jun	No vernal pool habitat present. Nearest occurrence is ~7.5–8.5 mi. away.
Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	–/–/1B.2	Southern Sacramento Valley	Alkaline flats in valley and foothill grassland; 32–656 feet	Mar–May	Habitat present in grasslands but no suitable microhabitat (i.e., alkaline soils) is present. Nearest occurrence is ~7 mi. away.
Little mousetail *Myosurus minimus* ssp. *apus*	–/–/3.1	Central Valley, San Francisco Bay area, southern Outer Coast Ranges, South Coast	Alkaline soils in valley and foothill grassland and vernal pools; 66–2,100 feet	Mar–Jun	Study area is substantially lower than species elevation range. No alkaline soils or vernal pool habitat present. No occurrences within 10 mi.
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1	Inner North Coast Ranges, western Sacramento Valley	Mesic areas in cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools;16–5,709 feet	Apr–Jul	Habitat present in grasslands but no suitable microhabitat (i.e., mesic areas) is present. No occurrences within 10 mi.
Colusa grass *Neostapfia colusana*	T/E/1B.1	Central Valley with scattered occurrences from Colusa to Merced Counties	Adobe soils of vernal pools; 16–656 feet	May–Aug	No vernal pool habitat present. Nearest occurrence is ~9 mi. away.
Sanford's arrowhead *Sagittaria sanfordii*	–/–/1B.2	Scattered locations in Central Valley and Coast Ranges from Del North to Fresno Counties	Freshwater marshes, sloughs, canals, and other slow-moving water habitats; below 2,132 feet	May–Oct	No marshes, sloughs, or canals present. Nearest occurrence is ~4.5 mi. away.

Common and Scientific Name	Legal Status[a] Federal/ State/CNPS	Geographic Distribution/Floristic Province[1]	Habitat Requirements	Identification Period	Potential for Occurrence in CHP Academy Study Area
Crampton's tuctoria *Tuctoria mucronata*	E/E/1B.1	Southwestern Sacramento Valley, Solano and Yolo Counties	Mesic areas in valley and foothill grassland, vernal pools; 16–33 feet	Apr–Aug	Habitat present in grasslands but no suitable microhabitat (i.e., mesic areas) is present. No vernal pool habitat present. Nearest occurrence is ~9 mi. away.

[a] Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.
T = listed as threatened under the Federal Endangered Species Act.
– = no listing.

State

E = listed as endangered under the California Endangered Species Act.
R = listed as rare under the California Native Plant Protection Act (this category is no longer used for newly listed plants, but some plants previously listed as rare retain this designation.
– = no listing.

California Native Plant Society (CNPS)

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
3 = List 3 species: more information is needed about this plant
4 = List 4 species: limited distribution and on a watch list.
0.1 = seriously endangered in California.
0.2 = fairly endangered in California.
* = presumed extirpated from that County.

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4.10.1.2.6 Tree Resources

Approximately 78 trees were observed during the December 2008 arborist survey and consisted of Goodding's black willow, box elder, interior live oak (*Quercus wislizeni*), coast live oak (*Quercus agrifolia*), Fremont cottonwood, Oregon ash, catalpa (*Catalpa* sp.), and valley oak. The results of the December 2008 arborist survey are shown in Table 4.10-2. None of the trees observed during the arborist survey met the definition of a heritage or landmark tree as defined in the City's Tree Preservation Ordinance. Trees located outside of the area that was covered during the 2008 arborist survey consist of scattered individual trees and trees that comprise the small patch of Great Valley mixed riparian forest located at the west end of the study area. Although none of them appear to meet the City's definition of a heritage or landmark tree, they have not been surveyed and have the potential to be protected under the City's Tree Preservation Ordinance.

Table 4.10-2. Arborist Survey Results for CHP Academy EIP

Tree Species	Number of Individuals Observed
Goodding's black willow	16
Box elder	4
Interior live oak	22
Coast live oak	1
Fremont cottonwood	11
Oregon ash	3
Catalpa	2
Valley oak	19

4.10.1.2.7 Invasive Plant Species

Plant species that are considered invasive by the California Department of Agriculture and the California Invasive Plant Council are well-represented and fairly widespread throughout the study area (California Invasive Plant Council 2006, 2007; California Department of Agriculture 2009). Invasive plant species that were observed in the study area during the field visits were Himalayan blackberry, perennial pepperweed, yellow star-thistle, Bermuda grass, Mediterranean mustard, and ripgut brome. The California Department of Food and Agriculture and California Invasive Plant Council ratings for the invasive species observed during the site visits are provided in the plant list for the study area are in Appendix F.

4.10.2 Environmental Consequences

This section describes the environmental consequences relating to vegetation and wetlands for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.8.3.3, Effects and Mitigation Measures.

4.10.2.1 Assessment Methods

Evaluation of the vegetation and wetland effects in this section is based on the information provided by technical maps, reports, and other documents that describe the resource conditions of the study area. This information was then compared to the type and location of proposed flood and recreation alternatives to determine whether effects would occur.

4.10.2.2 Determination of Effects

For this analysis, based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.), an effect pertaining to vegetation and wetlands was considered an adverse effect under NEPA and a significant impact under CEQA if it would:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by DFG or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by CWA Section 404 (including, but not limited to, marshes and vernal pools) through direct removal, filling, hydrological interruption, or other means;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan.

4.10.2.2.1 Effect Assumptions

The following assumptions regarding project effects on vegetation and wetlands in the CHP Academy study area have been made for this analysis.

- No special-status plants occur in the study area and therefore effects on special-status plant species are not discussed in this section.
- No landmark or heritage trees occur in the study area and therefore effects on protected trees are not discussed in this section.
- Other than minor trimming, no direct effects on Great Valley mixed riparian forest would occur as a result of implementation of the proposed project alternatives.
- No trees located behind the fence of the adjacent CHP Academy property would be removed.
- All project activities, including equipment staging and access, would take place only within the project disturbance footprint and noted staging areas.
- The project would comply with the USACE vegetation-free policy (i.e., no vegetation is permitted within the levee's operation and maintenance zone, which includes the levee itself and an area extending 15 feet from the landside and waterside toes).
- Fill or borrow material would be obtained from a quarry or other authorized location.

- There would be effects related to the routine operation or maintenance activities under the proposed project. WSAFCA would continue with the authorized levee maintenance actions that are currently used on the Sacramento Bypass Levee. Maintenance of the relief wells (proposed under Alternative B) and lateral drainage system would be performed from maintenance roads.
- If discharge of fill into waters of the United States is associated with the proposed project, WSAFCA would require a CWA Section 404 permit from the USACE Sacramento District, and CWA Section 401 certification from the Central Valley RWQCB. Before construction begins, WSAFCA would obtain all necessary permits pertaining to affected waters of the United States. The permitting process would also require compensation for construction-, operation-, and maintenance-related effects.
- Grading would require a CWA Section 402 permit and preparation of a SWPPP.
- Grading or other construction activities would require a streambed alteration agreement from DFG.

4.10.2.2.2 Effect Mechanisms

Vegetation and wetland resources could be directly and indirectly affected by the proposed project. The following types of activities could cause varying degrees of effects on these resources:

- grading, and fill placement during construction of levee alternatives;
- channel dewatering or installation of temporary water-diversion structures;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site into adjacent areas;
- introduction or spread of invasive plant species into adjacent open space areas; and
- runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for levee alternatives, operations, and maintenance into sensitive biological resource areas (e.g., riparian habitat, wetlands).

4.10.3 Effects and Mitigation Measures

4.10.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects on vegetation, such as disturbance of special-status plant species or wetlands would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the programmatic Vegetation and Wetlands analysis (Section 3.8.3.3.1). In summary, these effects could include significant loss of vegetation and habitat quality due to both the hydraulic forces of the flood itself as

well as the clean-up efforts. However, given the uncertainty of the occurrence or magnitude of such an event, potential effects on vegetation and waters of the United States cannot be fully quantified based on available information.

Little to no vegetation will be removed at this EIP site to comply with the USACE vegetation policy as there is very little woody vegetation within the specified corridor. No effects on vegetation are anticipated in relation to implementation of the Corps' vegetation guidelines under the No Action Alternative.

4.10.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on vegetation and wetlands. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Project Construction	Significant	Less than significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than significant	N/A	N/A

The following detail for Effects VEG-3, VEG-4, and VEG-5 is specific to The CHP Academy APA.

Effect VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Project Construction

With the exception of minor trimming, no direct effects on the 0.03 acre of Great Valley mixed riparian forest would occur as a result of the proposed project; however, construction activities associated with the proposed project could potentially result in the disturbance of the Great Valley mixed riparian forest located adjacent to the project disturbance footprint (i.e., construction zone). This effect is potentially significant because the proposed project could have a significant effect on a sensitive natural community. Implementation of mitigation measures VEG-MM-1, VEG-MM-4, VEG-MM-5, and VEG-MM-6 would ensure that the proposed project would not have a significant effect on the Great Valley mixed riparian forest in the study area.

Mitigation

Mitigation Measure VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat

For direct effects on woody riparian habitat that cannot be avoided, WSAFCA will compensate for the loss of riparian habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with the appropriate state and Federal agencies during the permitting process (e.g, 2:1=2 acres restored/created/enhanced or credits purchased for every 1 acre removed. Compensation may be a combination of off-site restoration or mitigation credits. WSAFCA will develop a restoration and monitoring plan that describes how riparian habitat will be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and Federal agencies.

If WSAFCA identifies on-site areas (adjacent to the levees) that are outside the USACE vegetation-free zone and chooses to compensate on site or in the project vicinity, a revegetation plan will be prepared. The revegetation plan will be developed prior to the removal of existing riparian vegetation and will be conducted on site or in the project vicinity to the extent feasible; however, mitigation site selection will avoid areas where future levee alternatives or maintenance is likely.

The revegetation plan will be prepared by a qualified restoration ecologist and reviewed by the appropriate agencies. The revegetation plan will specify the planting stock appropriate for each riparian land cover type and each mitigation site, ensuring the use of genetic stock from the project area. The plan will employ the most successful techniques available at the time of planting. Success criteria will be established as part of the plan. Plantings will be maintained for a minimum of 5 years, including weed removal, irrigation, and herbivory protection.

WSAFCA will monitor the plantings annually for 4 years, followed by monitoring every 2 years for the next 6 years to ensure that the plantings have established successfully. WSAFCA will submit annual monitoring reports of survival to the regulatory agencies issuing permits related to habitat effects, including DFG, USACE, NMFS, and USFWS. Replanting will be necessary if success criteria are not met. The riparian habitat mitigation will be considered successful when the sapling trees established meet the success criteria, the habitat no longer requires active management, and vegetation is arranged in groups that, when mature, replicate the area, natural structure, and species composition of similar riparian habitats in the region.

Mitigation Measure VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a qualified biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid effects on sensitive biological resources (e.g., riparian habitat, special-status species, special-status wildlife habitat) and the penalties for not complying with permit requirements. The biologist will inform all construction personnel about the life history of special-status species with potential for occurrence on site, the importance of maintaining habitat, and the terms and conditions of the biological opinion or other authorizing document. Proof of this instruction will be submitted to USFWS, DFG, or other overseeing agency, as appropriate.

The training will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on special-status species during project construction. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Educational training will be conducted for new personnel as they are brought on the job during the construction period. General restrictions and guidelines for vegetation and wildlife that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the project site.
- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.
- All food-related trash will be disposed of in closed containers and removed from the study area at least once a week during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the project site.
- No pets or firearms will be allowed in the project site.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.

For special-status wildlife, any worker who inadvertently injures or kills a special-status wildlife species or finds one dead, injured, or entrapped will immediately report the incident to the biological monitor. The monitor will immediately notify WSAFCA, who will provide verbal notification to the USFWS Endangered Species Office or the local DFG warden or biologist within 3 working days. WSAFCA will follow up with written notification to USFWS or DFG within 5 working days.

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone

The construction specifications will require that WSAFCA retain a qualified biologist to identify sensitive biological resources (e.g., special-status species, riparian habitat, wetlands, elderberry shrubs) adjacent to the construction zone that are to be avoided during construction. Sensitive biological resources located adjacent to the directly affected area required for construction, including staging and access, will be fenced off to avoid disturbance in these areas. If necessary, concrete barriers will also be installed to protect sensitive biological resources in areas adjacent to the directly affected area.

Before construction, the contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing (and, if necessary, concrete barriers) and will place stakes around the sensitive biological resources to indicate their locations. The protected area will be clearly identified on the construction specifications. The fencing will be installed at least 20 feet from each sensitive biological resource and will be in place before construction activities are initiated. The fencing will be maintained by WSAFCA or its contractor throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is replaced.

Mitigation Measure VEG-MM-6: Retain a Biological Monitor

WSAFCA will retain qualified biologists to monitor construction activities adjacent to sensitive biological resources (e.g., special-status species, riparian habitat, wetlands, elderberry shrubs). The biologists will assist the construction crew, as needed, to comply with all program implementation restrictions and guidelines. In addition, the biologists will be responsible for ensuring that the program proponent or its contractors maintain the construction barrier fencing adjacent to sensitive biological resources.

Effect VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction

Although the depressional wetland (2.96 acres), pond (0.16 acre), canal (0.11 acre), and drainage ditch (0.05 acre) are located outside the construction zone, ground disturbance associated with the construction of the two levee deficiency treatments could potentially result in the placement of fill materials into one or all of these features. This effect is potentially significant because if fill materials enter the depressional wetland, the proposed project would have adverse significant effect on a sensitive natural community that was interpreted to be a federally protected wetland under the preliminary jurisdictional determination approach. Although the drainage ditch is not considered a sensitive natural community and is not a wetland, it was also interpreted to be a water of the United States under the preliminary jurisdictional determination approach and is therefore also subject to USACE regulation under CWA. Implementation of mitigation measures VEG-MM-4, VEG-MM-5, and VEG-MM-6, described above, would ensure that the CHP Academy APA would not have adverse significant effect on the depressional wetland, pond, canal, or drainage ditch.

Effect VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction

Although the trees located outside the CHP Academy EIP project area boundary do not appear to meet the definition of heritage or landmark trees, they have not been formally surveyed and therefore still have the potential to be protected under the City's Tree Preservation Ordinance. With the exception of the small portion of the canopy of the Great Valley mixed riparian forest (discussed under Effect CHP-VEG-1), these trees are located outside the construction zone. However, ground disturbance associated with the construction of the two levee deficiency treatments could potentially result in the disturbance of protected trees. Implementation of program mitigation measures VEG-MM-4, VEG-MM-5, VEG-MM-6, described above, and VEG-MM-7, VEG-MM-9, and VEG-MM-10, below, would ensure that CHP Academy APA would not have a significant effect on trees that are potentially protected under the local ordinance.

Mitigation

Mitigation Measure VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources

WSAFCA will redesign proposed projects to avoid and minimize effects on sensitive biological resources (e.g., riparian areas outside the USACE woody vegetation-free zones, wetlands, protected trees).

Mitigation Measure VEG-MM-9: Conduct a Tree Survey

WSAFCA will retain a certified arborist to conduct a tree survey to identify protected trees in the study area. The arborist will document the results of the tree survey in a report that includes the location, species, size (diameter at breast height), overall health, and dripline diameter of the trees. If the arborist's survey does not identify any protected trees that would be removed or damaged as a result of the proposed program, no additional mitigation would be necessary. If protected trees are present, WSAFCA will implement Mitigation Measure VEG-MM-10.

Mitigation Measure VEG-MM-10: Compensate for Loss of Protected Trees

WSAFCA will apply for a tree permit for the removal of any protected trees during construction. WSAFCA will replace trees that must be removed with trees at or near the location of the effect or another location within West Sacramento approved by the City's tree administrator. WSAFCA will also replace the replacement tree if it dies within 3 years of the initial planting. Replacement is not required if a tree is removed because it poses a risk, hosts a plant parasite, or is otherwise an undesirable species or specimen at the discretion of the City's tree administrator.

Replacement trees are required at a ratio of 1:1 (i.e., 1-inch diameter of replacement plant for every 1-inch diameter of tree removed). Trees may also be mitigated through payment of an in-lieu fee, which will be used to purchase and plant trees elsewhere in West Sacramento. Mitigation will be subject to approval by the City's tree administrator and may consider species affected, replacement species, location, health and vigor, habitat value, and other factors to determine fair compensation for tree loss.

Effect VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction

Invasive plants are already present in the project area. However, construction activities associated with construction could introduce new invasive plants or contribute to the spread of existing invasive plants to un-infested areas outside the project area. Invasive plants or their seeds may be dispersed by construction equipment if appropriate prevention measures are not implemented. The introduction or spread of invasive plants as a result of the proposed project could have a significant effect on sensitive natural communities within and outside the project area by displacing native flora. The implementation of one or more of the BMPs described in the environmental commitment to avoid or minimize the spread or introduction of invasive plant species (described in detail in Section 2.9 of Chapter 2, Alternatives) will ensure that the proposed project would not have a significant effect on sensitive natural communities from the introduction or spread of invasive plants.

4.10.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on vegetation and wetlands. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Project Construction	Significant	Less than significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than significant	N/A	N/A

The following detail for Effects VEG-3, VEG-4, and VEG-5 is specific to The CHP Academy Alternative B:

Effect VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Project Construction

With the exception of minor trimming, no direct effects on the 0.03 acre of Great Valley mixed riparian forest would occur as a result of implementation of CHP Academy Alternative B; however, construction activities associated with CHP Academy Alternative B could potentially result in the disturbance of the Great Valley mixed riparian forest located adjacent to the disturbance footprint (i.e., construction zone). This effect is potentially significant because Alternative B could have a significant effect on a sensitive natural community. Implementation of program mitigation measures VEG-MM-1, VEG-MM-4, VEG-MM-5, and VEG-MM-6, described above under CHP Academy APA,

would ensure that CHP Academy Alternative B would not have a significant effect on the Great Valley mixed riparian forest at the CHP Academy EIP area.

Effect VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction

Although the depressional wetland (2.96 acres), pond (0.16 acre), canal (0.11 acre), and drainage ditch (0.05 acre) are located outside the construction zone, ground disturbance associated with the construction of Alternative B could potentially result in the placement of fill materials into one or all of these features. This effect is potentially significant because if fill materials enter the depressional wetland, the proposed project would have adverse significant effect on a sensitive natural community that was interpreted to be a federally protected wetland under the preliminary jurisdictional determination approach. Although the drainage ditch is not considered a sensitive natural community and is not a wetland, it was also interpreted to be a water of the United States under the preliminary jurisdictional determination approach and is therefore also subject to USACE regulation under CWA. Implementation of program mitigation measures VEG-MM-4, VEG-MM-5, and VEG-MM-6, described above under CHP Academy APA, would ensure that Alternative B would not have a significant effect on the depressional wetland, pond, canal, or drainage ditch.

Effect VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction

Although the trees located outside the CHP Academy EIP project area boundary do not appear to meet the definition of heritage or landmark trees, they have not been formally surveyed and therefore still have the potential to be protected under the City's Tree Preservation Ordinance. With the exception of the small portion of the canopy of the Great Valley mixed riparian forest (discussed under Effect CHP-VEG-1), these trees are located outside the construction zone. However, ground disturbance associated with the construction of CHP Academy Alternative B could potentially result in the disturbance of protected trees. Implementation of program mitigation measures VEG-MM-4, VEG-MM-5, VEG-MM-6, VEG-MM-7, VEG-MM-9, and VEG-MM-10, described above under CHP Academy APA, would ensure that CHP Academy Alternative B would not have a significant effect on trees that are potentially protected under the local ordinance.

Effect VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction

This effect is the same as described above under CHP Academy APA. This effect is considered less than significant. No mitigation is required.

Section 4.11

Fisheries and Aquatic Resources—CHP Academy Early Implementation Project

4.11.1 Affected Environment

This section describes the affected environment for fisheries and aquatic resources in the CHP Academy EIP project area, including the regulatory and environmental setting.

4.11.1.1 Regulatory Setting

4.11.1.1.1 Federal

The following Federal policies related to fisheries and aquatic resources may apply to implementation of the CHP Academy EIP. Please see the program information in Section 3.9.2.1, Regulatory Setting, for a more complete description of each policy.

- Endangered Species Act
- Clean Water Act
- Magnuson-Stevens Fishery Conservation and Management Act

4.11.1.1.2 State

The following state policies related to fisheries and aquatic resources may apply to implementation of the CHP Academy EIP. Please see the program information in Section 3.9.2.1, Regulatory Setting, for a more complete description of each policy.

- California Endangered Species Act
- California Fish and Game Code Section 1600: Streambed Alteration Agreements

4.11.1.1.3 Local

The following local policies related to fisheries and aquatic resources may apply to implementation of the CHP Academy EIP. Please see the program information in Section 3.9.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

4.11.1.2 Environmental Setting

4.11.1.2.1 Study Area

The CHP Academy EIP project area is located on the Sacramento Bypass Levee. The Sacramento Bypass Levee has a concrete-lined bank and the channel is floodplain habitat with terrestrial

vegetation. The study area contains 1.16 acres of great valley mixed riparian forest trees; however, there is no SRA present in the study area. The Sacramento Bypass is only flooded in the winter during high flow events.

The Sacramento Bypass provides emigration and rearing habitat for juvenile anadromous fish and spawning and rearing habitat for Sacramento splittail. The occurrence of these life stages in the Sacramento Bypass is limited to periods when flooding (via the Fremont and Sacramento Weirs) allows individuals to access the area from the Sacramento River. Sacramento splittail and juvenile Chinook salmon have been captured in the Sacramento Bypass (Jones & Stokes 2001). Most juveniles emigrate from the Sacramento Bypass during winter and spring before the floodplains become dry. Thus, the potential for these species' life stages to occur in these areas in any given year depends on the occurrence of flooding; the timing, magnitude, and duration of flooding; and the seasonal timing of specific life stages.

4.11.1.2.2 Aquatic Habitat

Aquatic habitat in the CHP Academy project area consists of seasonal habitat characterized as floodplain habitat; which is present in the Sacramento Bypass. As discussed in the Program Environmental Setting, fish and other species use this habitat for growth, survival, and reproduction. Floodplains are important habitat for young fish, especially Chinook salmon and splittail (Moyle et al. 2005: 21) that use inundated floodplain habitats (when available) for rearing. Chinook growth has been shown to be faster in floodplain habitat (Sommer et al. 2001b) and Sacramento splittail produce the highest number of young when flows are high and floodplain habitat is inundated (Moyle 2002: 148). Fish may use floodplain habitat differently, depending on species and life stage. Special-status fish species that may use the floodplain habitat within the CHP Academy project area include Chinook salmon, Sacramento splittail, green sturgeon, steelhead, and river lamprey. A description of these species, including their status and life stages, is provided in the Program Area Affected Environment.

4.11.2 Environmental Consequences

This section describes the environmental consequences relating to fisheries and aquatic resources for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.9.3.3, Effects and Mitigation Measures.

4.11.2.1 Assessment Methods

To prepare for the field surveys and analysis of the potential effects of the proposed program on fish species, fisheries biologists reviewed existing resource information related to the study area to evaluate whether sensitive habitats and special-status fish species are known from or could occur in the study area. The information reviewed included the following sources:

- a USFWS list of endangered, threatened, and proposed species for the Sacramento West, Clarksburg, Liberty Island, and Rio Vista USGS 7.5-minute quadrangle and Sacramento and Yolo Counties (U.S. Fish and Wildlife Service 2009); and

- published and unpublished documents and reports pertaining to the study area.

A reconnaissance-level survey of the study area was conducted by an ICF International fisheries biologist on October 26, 2007. During the survey, fish habitat was identified and evaluated for its ability to support special-status fish species.

The key effects were identified and evaluated based on the environmental characteristics of the CHP Academy EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

4.11.2.2 Determinations of Effects

For this analysis, an effect pertaining to special-status fish species and their habitats was considered adverse under NEPA or significant under CEQA if it would result in any of the following environmental effects, which are based on professional practice and CEQA Guidelines Appendix G (14 CCR 15000 *et seq.).*

Assessment species are selected based on listing under the ESA and/or CESA. An effect was considered adverse under NEPA and significant under CEQA if program actions would substantially reduce the abundance and distribution of the identified important fish species. Additionally, adverse effects/significant impacts may occur if the project alternatives would result in:

- substantial interference with the movement of any resident or migratory fish species;
- substantial long- or short-term loss of habitat quality or quantity;
- substantial adverse effects on rare or endangered species, candidate species, other special-status species, or habitat of the species; or
- substantial adverse effects on fish communities or species protected by applicable environmental plans and goals.

4.11.2.2.1 Effect Assumptions

The determination of significance requires that:

- environmental conditions are measurably changed by the project,
- the change in environmental conditions adversely affects a species or its habitat,
- the change in environmental conditions is permanent or ongoing or affects a substantial proportion of the species population, or
- species population abundance is likely reduced, including a short-term reduction.

4.11.2.2.2 Effect Mechanisms

The assessment of effects considers the occurrence and potential occurrence of species and life stages relative to the magnitude, timing, frequency, and duration of program activities. Species habitat attributes potentially affected by construction activities include rearing habitat area and migration habitat conditions. Short-term effects on fish species attributable to bank protection activities include water quality effects and noise and disturbance. Long-term effects on fish habitat include loss of aquatic vegetation and SRA cover. This evaluation of effects on special-status fish species was based on the analysis of the proposed levee treatments.

Short-term construction effects are evaluated qualitatively based on general knowledge of the physiological tolerances and behavioral responses of listed fish species to potential increases in turbidity and suspended sediment, noise, and contaminants.

4.11.3 Effects and Mitigation Measures

4.11.3.1 No Action Alternative

The No Action Alternative would consist of the continuation of the existing deficiencies along the portion of the Sacramento Bypass Levee reach encompassed by the CHP Academy site (i.e., no levee improvements would be implemented to meet the minimum level of acceptable flood protection). Current levee operations and maintenance activities would continue. No construction-related release of contaminants would occur, and no noise and disturbance to special-status fish species or construction-related loss of habitat for special-status fish species would occur. The current levee maintenance activities, including mowing and application of herbicides, would continue.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the magnitude described in the Fisheries and Aquatics program analysis (Section 3.9.3.3.1). In summary, those effects could result in the displacement of fish into flooded areas and the potential for stranding and mortality. In addition, significant water quality effects could result from the release of hazardous materials during a flooding event, which could lead to stress and direct mortality or significantly affect migration, spawning and rearing habitat of fish species. Emergency clean-up and earth-moving activities could also result in an increase in sediment and turbidity and the release of hazardous materials into the Sacramento Bypass, Yolo Bypass, Delta, and adjacent waterways that significantly affect migration, spawning or rearing habitat, or result in direct mortality of special status fish species. Given the unpredictable nature of emergency clean-up activities, is it likely that implementation of BMPs and measures to reduce effects on fish would not be possible. All of these effects would be considered significant.

4.11.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effect on fisheries and aquatic resources. A description of the effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish	Less than significant	N/A	

Effect FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish

When the Sacramento bypass is inundated with seasonal flood flows, it can provide seasonal floodplain habitat for special status fish species such as juvenile Chinook salmon (for rearing) and by Sacramento splittail (for spawning and rearing). Green sturgeon and delta smelt may also use

floodplain habitat during migration. Any effects on floodplain habitat as a result of the proposed project would be temporary and primarily related to construction activities. Post-construction, any disturbed areas would be hydroseeded to provide reestablishment of vegetation. Effects on fish would be less than significant because construction would be limited to the typical construction season and outside the principal spawning and migration season. The typical construction season generally corresponds to the dry season, but, if necessary, WSLIP construction may occur outside the limits of the dry season. Construction outside the typical dry season would likely only occur during years when the onset of rains is delayed and conditions are still favorable for construction activities to continue without adverse environmental effects and only as allowed by applicable permit conditions or consultation with NMFS.

4.11.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effect on fisheries and aquatic resources. A description of the effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish	Less than significant	N/A	

Effect FISH-12: Temporary Effects on Seasonal Floodplain Habitat for Special-Status Fish

Construction of a stability berm, interior drain, and relief wells would all take place on the landside of the levee, making the majority of construction activities occur outside the channel. However, staging areas would still occur within the bypass. Nonetheless, as discussed above under the CHP APA, construction would occur during the dry season and floodplain habitat would be reseeded and restored to its original condition post-construction. Effects on special-status fish or their habitat would be less than significant. No mitigation is required.

Section 4.12
Wildlife—
CHP Academy Early Implementation Project

4.12.1 Affected Environment

This section describes the affected environment for wildlife resources in the CHP Academy EIP project area, including regulatory and environmental setting.

4.12.1.1 Regulatory Setting

4.12.1.1.1 Federal

The following Federal policies related to wildlife resources may apply to the CHP Academy EIP. Please see Section 3.10.2.1, Regulatory Setting, for a more complete description of each policy

- Federal Endangered Species Act
- Section 7: ESA Authorization Process for Federal Actions
- Section 9: ESA Prohibitions
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

4.12.1.1.2 State

- California Endangered Species Act
- California Fish and Game Code

4.12.1.1.3 Local

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

4.12.1.2 Environmental Setting

This section discusses the environmental setting related to wildlife in the study area for the CHP Academy EIP (defined below), including the methods used to evaluate wildlife habitat, a description of existing land cover types in the project study area, identification of waters of the United States (including wetlands), and discussions of the special-status wildlife species that are known to occur in the project region.

4.12.1.2.1 Study Area

The CHP Academy EIP project area is located in West Sacramento in Yolo County. The project area is approximately 6,500 feet in length, encompassing the Sacramento Bypass levee and additional areas

adjacent to the levee required for construction and staging. For the purposes of this section, the wildlife study area consists of the project area plus an approximately 100-foot-wide buffer zone that accounts for potential indirect effects on VELB. The majority of the study area consists of the levee itself. The portion of the Sacramento Bypass Levee in the study area is mostly unvegetated. Landscaped areas located just outside of the levee are associated with the CHP Academy. The Sacramento Bypass Levee is steeply sloped on both sides. The topography of the portion of the study area adjacent to both levees is relatively level. Elevations in the study area range from approximately 15 to 36 feet above mean sea level.

4.12.1.2.2 Field Surveys

Pre-Field Investigation

An ICF Jones & Stokes biologist reviewed CNDDB (2009a, b) and USFWS (2009) species lists and aerial photographs for the study area prior to field surveys.

Reconnaissance-Level Site Visits

An initial general survey of the project area was conducted by ICF Jones & Stokes biologists on November 29, 2007. The survey was conducted by walking around the study area to visually assess potential wildlife resources. Focused surveys of the project area, including an elderberry shrub survey (the host plant for VELB), were conducted by ICF Jones & Stokes biologists on January 9, 2009; February 13, 2009; and August 13, 2009. During all surveys, wildlife habitat uses associated with land cover types were identified, habitats were evaluated for their ability to support special-status wildlife species, and all wildlife species observed were recorded (Table 4.12-1).

Table 4.12-1. List of Wildlife Species Observed in the CHP Academy Study Area

Common Name	Scientific Name
Birds	
Acorn woodpecker	*Melanerpes formicivorus*
American crow	*Corvus brachyrhynchos*
American kestrel	*Falco sparverius*
Black phoebe	*Sayornis nigricans*
Brewer's blackbird	*Euphagus cyanocephalus*
Bushtit	*Psaltriparus minimus*
California towhee	*Pipilo crissalis*
Canada goose	*Branta canadensis*
Dark-eyed junco	*Junco hyemalis*
European starling	*Sturnus vulgaris*
Golden-crowned sparrow	*Zonotrichia atricapilla*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
House sparrow	*Passer domesticus*
Killdeer	*Charadrius vociferus*
Mallard	*Anas platyrhynchos*
Mourning dove	*Zenaida macroura*

Common Name	Scientific Name
Red-tailed hawk	*Buteo jamaicensis*
Rock dove	*Columba livia*
Spotted towhee	*Pipilo erythrophthalmus*
Swainson's hawk	*Buteo swainsoni*
Turkey vulture	*Cathartes aura*
Western meadow lark	*Sturnella neglecta*
Western scrub jay	*Aphelocoma californica*
White-crowned sparrow	*Zonotrichia leucophrys*
White-tailed kite	*Elanus leucurus*
Yellow-rumped warbler	*Dendroica coronata*

Elderberry Surveys

Elderberry shrub surveys consisted of walking through the project area and mapping, with a sub-meter accurate geographic positioning system (GPS), elderberry shrubs (and shrub clusters) in the proposed flood improvements construction area and within 100 feet in accordance with the USFWS Conservation Guidelines for the VELB (U.S. Fish and Wildlife Service 1999a). Other information recorded for each shrub included number of stems between 1 and 3 inches, 3 and 5 inches, and greater than 5 inches in diameter; whether each stem 1 inch or more in diameter is located in a riparian or non-riparian location; approximate height and width of the elderberry shrub; presence of VELB exit holes; and dominant vegetation that is associated with the elderberry shrub.

4.12.1.2.3 Wildlife Habitat—Land Cover Type Associations

The study area contains the following land cover types: non-native annual grassland, depressional wetland, Great Valley mixed riparian forest, open water, drainage ditch, and developed/landscaped areas. These land cover types are discussed below with respect to the habitat they provide for wildlife. A detailed description of each of these types, including the dominant plants contained within each type, is in Section 3.8, Vegetation and Wetlands. These land cover types are shown in Figure 3.8-3 along with acreages of these types occurring within the construction limit, staging area, and larger study area.

Non-Native Annual Grassland

The majority of the non-native annual grassland in the study area occurs adjacent to the Sacramento Bypass Levee. Non-native grassland in the study area consists of non-native annual grasses, forbs, and scattered shrubs.

Annual grasslands provide nesting and foraging habitat for several species of songbirds, including savanna sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), western meadowlark (*Sturnella neglecta*), and foraging habitat for several species of raptors including red-tailed hawk (*Buteo jamaicensis*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), great-horned owl(*Bubo virginianus*), and Swainson's hawk (*Buteo swainsoni*). California ground squirrels (*Spermophilus beecheyi*) commonly occur in annual grassland habitat. Their burrows provide important nesting habitat for western burrowing owls (*Athene cunicularia*

hypugea). Reptiles found in these habitats include California king snake (*Lampropeltis getulus californiae*), gopher snake (*Pituophis catenifer*), and western rattle snake (*Crotalus viridis*).

Depressional Wetland

A perennial depressional wetland encompassing approximately 3 acres occurs within the Sacramento Bypass basin portion of the study area. This wetland provides avian foraging opportunities for flycatchers such as western kingbird (*Tyrannus verticalis*) and black phoebe (*Sayornis nigricans*), swallows such as cliff swallow (*Petrochelidon pyrrhonota*), tree swallow (*Tachycineta bicolor*), barn swallow (*Hirundo rustica*), northern rough-winged swallow (*Stelgidopteryx serripennis*), and purple martin (*Progne subis*), waterfowl including mallard (*Anas platyrhynchos*) and ruddy duck (*Oxyura jamaicensis*), other water birds including eared grebe (*Podiceps nigricollis*), and wading birds including great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*). The wetland also contains suitable aquatic habitat for reptiles including common garter snake (*Thamnophis sirtalis*), giant garter snake (*Thamnophis gigas*), and western pond turtle (*Actinemys marmorata*) and amphibians including bullfrog (*Rana catesbeiana*), Pacific tree frog (*Hyla regilla*), and western toad (*Bufo boreas*). The wetland does not provide suitable habitat for federally listed vernal pool invertebrates because it is perennial.

Great Valley Mixed Riparian Forest

Great Valley mixed riparian forest occurs adjacent to the depressional wetland within the Sacramento Bypass portion of the study area (Figure 3.8-3). The dominant overstory species are Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), Goodding's black willow (*Salix gooddingii*), and valley oak (*Quercus lobata*). The shrub layer is relatively open and contains small valley oaks, box elder (*Acer negundo* var. *californicum*), and tree tobacco (*Nicotiana glauca*).

Overstory trees may be used for nesting and roosting by numerous raptors, including Swainson's hawk, white-tailed kite, red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), great horned owl, Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*) as well as by herons and egrets. Other birds that are known to use riparian forests for nesting include Bullock's oriole (*Icterus bullockii*), yellow-rumped warbler (*Dendroica coronata*), tree swallow (*Tachycineta bicolor*), yellow-billed magpie (*Pica nuttalli*), acorn woodpecker (*Melanerpes formicivorus*), northern flicker (*Colaptes auratus*), and western scrub jay (*Aphelocoma californica*). The understory of riparian forests provide habitat for mammals, including various species of rodents, raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Riparian forests also provide cover and foraging habitat for reptiles and amphibians, such as terrestrial garter snake (*Thamnophis elegans*), California king snake, gopher snake, Pacific tree frog, and western toad. Suitable areas in the understory may also be used as nesting habitat for western pond turtles.

Open Water

Open water areas consist of the canal, which runs perpendicular to the Sacramento Bypass Levee, and the pond just upstream of the canal pump station to the north of the levee. Open water areas contain foraging habitat for birds including swallows and other flycatcher birds, wading birds, and waterfowl. Specific bird species that may utilize these areas for foraging are comparable to those discussed above under the Great Valley mixed riparian forest community. This community also contains suitable aquatic habitat for amphibians and reptiles including bullfrogs, Pacific tree frogs, western toad, common garter snake, giant garter snake, and western pond turtle. Just outside of the

study area small to large patches of freshwater marsh occur in association with these open water areas increasing the overall habitat values and uses of these areas.

Drainage Ditch

A single drainage ditch is located inside the fence around the CHP Academy project area. The drainage ditch appears to drain upland areas between the site and the Sacramento Bypass Levee. The drainage ditch may provide breeding habitat for Pacific tree frogs and western toad.

Levee/Developed/Landscaped Areas

The levee/ developed/landscaped portions of the study area consist of the unvegetated portions of the Sacramento Bypass Levee and developed and landscaped areas in the CHP Academy project area. Unvegetated or developed areas have minimal potential to support wildlife. Landscape trees and shrubs present along the northern boundary of the CHP Academy project area have potential to support nesting of common and special-status birds with potential to nest in riparian forest areas.

4.12.1.2.4 Special-Status Wildlife

Special-status wildlife species are animals that are legally protected under the ESA, CESA, or other regulations and include species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species definitions are included above under the Program Environmental Setting section.

Based on the USFWS (2009) list for the quadrangle in the study area and Yolo County, a review of CNDDB (2009a,b) occurrences within a 10-mile radius of the study area, and information collected during field surveys, 35 special-status wildlife species were identified as having potential to occur in the project region (Table 4.12-2). Of these, 22 have low to no potential to occur because the study area is outside the species' known range or suitable habitat is absent from the study area. The remaining 13 wildlife species identified as having potential to occur in the study area include the VELB, giant garter snake, western pond turtle, Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, purple martin, northern harrier, western burrowing owl, hoary bat, western red bat, and pallid bat.

The protection status, distributional range, and habitat requirements for these species are described in the Program Environmental Setting section. Information regarding species occurrence within a 10-mile radius of the study area and the suitability of the study area for a particular species is presented below.

Table 4.12-2. Special-Status Wildlife Species with Potential to Occur in the CHP Academy Study Area

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Invertebrates				
Delta green ground beetle *Elaphrus viridus*	T/–	Restricted to Olcott Lake and other vernal pools at Jepson Prairie Preserve, Solano County	Sparsely vegetated edges of vernal lakes and pools; occur up to 250 feet from pools	None. Study area is outside of the species' range.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–/–	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant	High. Known occurrences within a mile of the study area.
Conservancy fairy shrimp *Branchinecta conservatio*	E/–/–	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	None. Study area is outside of the species' range.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	None. No suitable habitat in the study area.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–/–	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	None. No suitable habitat in the study area.
Lange's metalmark butterfly *Apodemia mormo langei*	E/–/–	Once found throughout the Antioch Dunes; range now reduced to less than 10 acres of Antioch Dunes in Contra Costa County	Limited to dense to moderately dense patches of food plant, wild buckwheat, in stabilized sand dunes	None. Study area is outside of the species' range.
Amphibians				
California tiger salamander *Ambystoma californiense*	T/C/–	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	None. No suitable habitat in the study area.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
California red-legged frog *Rana aurora draytonii*	T/SSC/–	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	None. The study area is outside of this species current known range. This species is believed to be extirpated from the valley floor.
Reptiles				
Silvery legless lizard *Anniella pulchra pulchra*	–/SSC/–	Along the Coast, Transverse, and Peninsular Ranges from Contra Costa County to San Diego County with spotty occurrences in the San Joaquin Valley	Habitats with loose soil for burrowing or thick duff or leaf litter; often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas	Low. No CNDDB occurrences within 10 miles of the study area. Potential habitat in the study area.
Giant garter snake *Thamnophis couchi gigas*	T/T/–	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	Moderate. CNDDB occurrences 2 miles from study area. Suitable aquatic and upland habitat in the study area.
Western pond turtle *Actinemys marmorata*	–/SSC/–	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Moderate. Species observed within ponds 4 miles south of study area along South River Road. Suitable habitat within study area.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Birds				
Double-crested cormorant *Phalacrocorax auritus* (rookery site)	–/SSC/–	Winters along the entire California coast and inland over the Coast Ranges into the Central Valley from Tehama County to Fresno County; a permanent resident along the coast from Monterey County to San Diego County, along the Colorado River, Imperial, Riverside, Kern and King Co.s, and the islands off San Francisco; breeds in Siskiyou, Modoc,Lassen, Shasta, Plumas, and Mon Co.s; also breeds in the San Francisco Bay Area and in Yolo and Sacramento Counties	Rocky coastlines, beaches, inland ponds, and lakes; needs open water for foraging, and nests in riparian forests or on protected islands, usually in snags	Low. No CNDDB nesting records within 10 miles of the study area. No nesting habitat within study area. Sacramento River within study area provides suitable foraging habitat.
White-faced ibis *Plegadis chihi* (rookery site)	–/SSC	Both resident and winter populations on the Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds at Honey Lake, Lassen County, at Mendota Wildlife Management Area, Fresno County, and near Woodland, Yolo County.	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	Low. No CNDDB nesting records within 10 miles of the study area. No suitable nesting habitat within study area. Grasslands within the Sacramento Bypass provide suitable resting and foraging habitat.
California black rail *Laterallus jamaicensis coturniculus*	–/T/–	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties.	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations.	None. No CNDDB nesting records within 10 miles of the study area. No suitable habitat within study area.
California clapper rail *Rallus longirostris obsoletus*	E/E/–	Marshes around the San Francisco Bay and east through the Delta to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the mud in sloughs	None. Study area is outside of the species' range.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Mountain plover *Charadrius montanus*	PT/SSC	Does not breed in California; in winter, found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grainfields	None. Study area is outside of the species' breeding range, unlikely to forage in study area.
Western snowy plover (inland population) *Charadrius alexandrinus nivosus*	–/SSC	Nests at inland lakes throughout northeastern, central, and southern California, including Mono Lake and Salton Sea	Barren to sparsely vegetated ground at alkaline or saline lakes, reservoirs, ponds and riverine sand bars; also along sewage, salt-evaporation, and agricultural waste-water ponds	None. No suitable nesting or foraging habitat in the study area.
Northern harrier *Circus cyaneus*	–/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	Moderate. No CNDDB nesting records within 10 miles of the study area. Grasslands within the Sacramento Bypass provide suitable nesting and foraging habitat.
White-tailed kite *Elanus leucurus*	–/ FP/–	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	High. CNDDB nesting records within 4 miles of study area. Suitable nesting and foraging habitat in study area.
Swainson's hawk *Buteo swainsoni*	–/T/–/–	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High. CNDDB nesting records within study area.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Western burrowing owl *Athene cunicularia hypugea*	–/SSC/–	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High. CNDDB nesting records within a mile of the study area. Suitable nesting and foraging habitat in study area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	–/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	None. No suitable nesting habitat in the study area; forests in study area are dominated by valley oak and contain abundant scrub jays.
Loggerhead shrike *Lanius ludovicianus*	–/SSC/–	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Moderate. No CNDDB nesting records within 10 miles of the study area. Suitable nesting and foraging habitat in study area.
Tricolored blackbird *Agelaius tricolor*	–/SSC/–	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	Moderate. CNDDB nesting records within 3 miles study area. No suitable nesting habitat in study area; suitable foraging habitat in grasslands within the Sacramento Bypass.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	–/SSC/–	Locally numerous in the Klamath Basin, Modoc Plateau, Great Basin desert, and large mountain valleys in northeastern California; and in the San Joaquin Valley. Common breeders in the Colorado River valley, the Salton Sink, and the western Mojave desert; scarce in the Sacramento Valley and along the southern coast in Los Angeles, Riverside, and San Bernardino counties.	Nest in marshes with tall emergent vegetation, such as tules or cattails, generally in open areas and edges over relatively deep water. Breeding marshes often on edges of deep water bodies such as lakes, reservoirs, and or larger ponds.	None. CNDDB nesting records approximately 10 miles south of the study area. No suitable nesting or foraging habitat in the study area.
Purple martin *Progne subis*	–/SSC/–	Coastal mountains south to San Luis Obispo County, west slope of the Sierra Nevada, and northern Sierra and Cascade ranges. Absent from the Central Valley except in Sacramento. Isolated, local populations in southern California	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges	Moderate. CNDDB nesting records under nearby freeway approximately 5 miles southeast of the study area. Suitable nesting habitat in study area.
Bank swallow *Riparia riparia*	–/T/–	Occurs along the Sacramento River from Shasta County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	Low. CNDDB nesting records approximately 5 miles southeast of the study area. No suitable nesting habitat in the study area.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	–/SSC/–	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover	None. Study area is outside of the species' range.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Grasshopper sparrow *Ammodramus savannarum*	–/SSC/–	Summer resident in the foothills of the Sierra Nevada and Coast Range from Mendocino and Trinity counties south to San Diego County.	Dry, dense grasslands with a variety of grasses and tall forbs and scattered shrubs.	Low. No CNDDB nesting records within 10 miles of the study area. Low quality nesting habitat within study area.
Suisun song sparrow *Melospiza melodia maxillaris*	–/SSC/–	Restricted to the extreme western edge of the Delta, between the cities of Vallejo and Pittsburg near Suisun Bay	Brackish and tidal marshes supporting cattails, tules, various sedges, and pickleweed	None. Study area is outside of the species' range.
Mammals				
Hoary bat *Lasurius cinerius*	–/SSC/–	Occurs throughout California from sea level to 13,200 feet.	Primarily found in forested habitats. Also found in riparian areas and in park and garden settings in urban areas. Day roosts within foliage of trees.	Moderate. Not reported to occur within study area; reported in CNDDB to occur approximately 2 miles of the study area. Suitable roosting habitat in study area.
Pallid bat *Antrozous pallidus*	–/SSC/FSS, WBWG: High priority	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	Moderate. Not reported to occur within study area; no CNDDB record reported to occur within 10 of the study area. Suitable roosting habitat in study area.
Western red bat *Lasiurus blossevillii*	–/–/FSS, WBWG: High priority	Scattered throughout much of California at lower elevations	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	Moderate. Not reported to occur within study area; no CNDDB record reported to occur within 10 of the study area. Suitable roosting habitat in study area.
Salt marsh harvest mouse *Reithrodontomys raviventris*	E/E, FP	San Francisco, San Pablo, and Suisun Bays; the Delta	Salt marshes with a dense plant cover of pickle-weed and fat hen; adjacent to an upland site	None. Study area is outside of the species' range.

Common and Scientific Names	Status Federal/State/ Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
American badger *Taxidea taxus*	–/SSC/–	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground	Low. One historic record (1938) reported approximately 8 miles from the study area. Study area contains limited suitable habitat for this species.

Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.

T = listed as threatened under the Federal Endangered Species Act.

P = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

– = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

C = candidate for listing

– = no listing.

Western Bat Working Group (WBWG) Available: http://www.wbwg.org/spp_matrix.html)

High priority = species are imperiled or at high risk of imperilment

Moderate priority= this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat

Low priority = While there may be localized concerns, the overall status of the species is believed to be secure.

1

Valley Elderberry Longhorn Beetle

Although no occurrences of VELB have been reported in the study area one CNDDB (2009b) record for VELB occurs within a mile of the study area along the Sacramento River riparian corridor. Numerous other occurrences are located within 10 miles of the study area. Although not reported to occur in the study area, elderberry shrubs sized 1 inch or more at ground level are present in the study area and therefore VELB has potential to occur. See elderberry shrub survey map Figure 4.12-1 for locations of these shrubs.

Giant Garter Snake

There are no CNDDB (2009b) records for giant garter snakes in the study area, although there are approximately 25 occurrences within 10 miles of the study area, most of which are labeled as sensitive. The closest of these occurrences is located in a drainage canal approximately 2 miles northeast of study area (California Natural Diversity Database 2009b).

Aquatic features in the study area include a drainage ditch, a depressional wetland, and open water (canal and pond north of canal pump station) areas. The drainage ditch is narrow, minimally vegetated, and was observed to contain little to no water during the snakes active period and therefore does not contain suitable habitat for this species. The depressional wetland and open water areas contain suitable aquatic habitat for this species and are associated with higher ground grassy uplands that would provide suitable basking and cover areas. Therefore, suitable aquatic and upland habitat for this species occurs in the study area adjacent to the construction site.

Western Pond Turtle

CNDDB (2009a, b) records do not indicate any western pond turtle occurrences in the study area. However pond turtles have been incidentally observed approximately 5 miles southeast of the study area in ponds west of South River Road, by ICF Jones & Stokes biologists. Additionally, western pond turtle is recorded to occur 8 miles east of the study area in a drainage at the McClellan Air Force Base (California Natural Diversity Database 2009a, b).

In the study area, the depressional wetland and open water areas contain suitable aquatic habitat for this species while surrounding upland areas may provide winter hibernacula and nesting habitat.

Swainson's Hawk

According to CNDDB (2010), five nest sites occur within 0.5 mile of the CHP Academy EIP project area. One nest site occurs within 100 feet, in the Sacramento Bypass. This nest site is located in a cottonwood tree in the depressional wetland north and adjacent to the study area. The nest was last observed to be used for breeding in 2001, at which time a breeding pair and three juveniles were observed. The next nearest nest site to the project area is located south of the Sacramento Bypass, west of the drainage canal in a cottonwood tree in a wetland corridor. This nest was last observed to be used for breeding in 2000, at which time two juveniles were observed. A third nest site is located in a cottonwood tree along the western end of the Sacramento Bypass Levee. This nest was last observed to be used for breeding in 2001, at which time a breeding pair and three juveniles were observed. Lastly, two nest sites are located in a riparian corridor on the east side of the Sacramento River. One of the nests was last observed to be used for breeding in 1998, at which time a breeding

pair were observed. The other nest was last observed to be used for breeding in 2000, at which time two juveniles were observed. In addition, there are numerous other Swainson's hawk nests reported within 10 miles of the study area (California Natural Diversity Database 2010). Grasslands in the study area are likely used as foraging habitat for this species.

WSAFCA has contacted the Yolo Natural Heritage Program to determine if additional nests have been noted through its survey efforts. Information was not readily available; however, should additional nests be determined to occur within 0.5 mile of the study area, they will be noted for preconstruction surveys.

White-Tailed Kite

There are no CNDDB (2009b) occurrences reported for this species in the study area. CNDDB (2009b) records indicate white-tailed kite nesting records within 10 miles of the study area with the closest occurrence approximately 4 miles east of the study area. Large trees within and adjacent to the study area provide suitable nesting habitat, and grasslands provide suitable foraging habitat.

Loggerhead Shrike

CNDDB (2009b) records do not indicate any loggerhead shrike occurrences within 10 miles of the study area. However, the study area is within the expected range for this species. Scattered trees and shrubs in the study area have potential to support nesting of this species and grasslands provide suitable foraging habitat.

Tricolored Blackbird

There are no CNDDB (2009b) occurrences for this species in the study area. Within 10 miles of the study area, CNDDB (2009b) indicated one tricolored blackbird nesting site located approximately 2 miles south of the study area, located near the Port of West Sacramento, in the vicinity of the Port North Levee. The birds were reported to be nesting in an area containing thistle and mustard in 1969 and 1974. The size of this population was not reported. The study area does not contain suitable nesting habitat for this species though grasslands provide suitable foraging habitat for this species.

Purple Martin

There are no CNDDB (2009b) occurrences for this species in the study area. Between 21 and 29 pairs of birds have been recorded nesting in weep holes under the I-5 freeway overpass at I Street approximately 3 miles southeast of the study area (California Natural Diversity Database 2009b). Numerous other CNDDB (2009b) nesting colonies under freeway or street overpasses have been reported within a 10-mile radius of the study area. In the study area, suitable nesting habitat for this species occurs within trees within the riparian forest.

Northern Harrier

There are no CNDDB (2009b) occurrences for this species in the study area. CNDDB (2009b) records do not indicate any northern harrier occurrences within 10 miles of the study area. Annual grasslands in the study area provide potential foraging habitat for this species.



Figure 4.12-1
CHP Academy Site: Elderberry Shrub Survey Map

Western Burrowing Owl

There are no CNDDB (2009b) occurrences for this species in the study area. CNDDB (2009b) indicated numerous burrowing owl records within10 miles of the study area. The closest recorded nesting record is within 1 mile of the site located 0.2 mile southwest of the intersection of Highway 84 and Harbor Boulevard, in the Sacramento River North Levee reach. Grassland areas in the study area provide suitable nesting habitat where ground squirrel burrows are present and open grassland areas near suitable nesting habitat provide suitable foraging habitat.

Hoary Bat

There are no CNDDB (2009b) occurrences for this species in the study area. CNDDB (2009b) records indicate a hoary bat observation approximately 3 miles southeast of the study area within the Sacramento River North Levee reach. Riparian forest in the study area provides suitable nesting and foraging habitat for this species.

Western Red Bat

There are no CNDDB (2009b) occurrences for this species in the study area or within 10 miles of the study area. Riparian forest in the study area provides suitable nesting and foraging habitat for this species.

Pallid Bat

There are no CNDDB (2009b) occurrences for this species in the study area or within 10 miles of the study area. Riparian forest in the study area provides suitable nesting and foraging habitat for this species.

4.12.2 Environmental Consequences

This section describes the environmental consequences relating to wildlife for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.10.3.3, Effects and Mitigation Measures.

4.12.2.1 Assessment Methods

The effect analysis below is quantitative and is based on site-specific information. The mitigation measures described for potential effects on sensitive biological resources have not been developed through consultation with resource agencies (e.g., DFG, USFWS, and USACE) at this time but are based on standard agency guidance.

The key effects were identified and evaluated based on the environmental characteristics of the CHP Academy EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

4.12.2.1.1 Effect Mechanisms

The following project-related activities could affect wildlife resources in the study area. These types of direct and indirect effects were used to assess effects on wildlife resources.

Direct Effects

Direct effects on wildlife could be caused by the following actions:

- vegetation clearing (including trees), grading, excavating/trenching, placement of rock slope protection, and paving activities during construction;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site;
- short-term construction-related noise (from equipment); and
- degradation of water quality in drainages and wetlands, resulting from construction runoff containing petroleum products.

Indirect Effects

Indirect effects on wildlife could e caused by the following actions:

- permanently altering light and noise levels;
- altering hydrology;
- causing damage through toxicity associated with herbicides, insecticides, and rodenticides;
- introducing pet and human disturbance (including trash dumping);
- increasing habitat for native competitors or predators; and
- introducing invasive non-native species.

4.12.2.2 Determination of Effects

For this analysis, an effect pertaining to wildlife resources was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.).*

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or the USFWS;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan; or

- contribute to a substantial reduction or elimination of species diversity or abundance.

Qualitative relationships between environmental conditions and life stage survival or wildlife resources are the basis of the effect assessment. Cause and effect relationships are identified for assessment species, including the relationship between environmental conditions and habitat, and the effects of changes in habitat on survival.

The mitigation measures described for potential effects on sensitive biological resources have not been developed through formal consultation or coordination with resource agencies (e.g., DFG, USFWS, NMFS, and the USACE). As part of the environmental analysis for the project, WSAFCA will contact agencies as part of the environmental compliance process to determine specific compensatory mitigation for effects on wetlands, state- and federally listed species, and riparian habitats. Additional mitigation measures may also be identified as conditions of future action permits (e.g., a BO, Section 7 Incidental Take Statement, or Section 1602 Streambed Alteration Agreement).

4.12.3 Effects and Mitigation Measures

4.12.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects on wildlife, such as displacement or loss of habitat would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Wildlife program analysis (Section 3.10.3.3.1). In summary, these effects could include the physical displacement, mortality, or destruction of habitat for a significant number of special-status species. Little to no vegetation will be removed at this EIP site to comply with the USACE vegetation policy as there is very little woody vegetation within the specified corridor. No effects on wildlife are anticipated in relation to implementation of the USACE vegetation guidelines under the No Action Alternative.

4.12.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on wildlife resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)	Less than significant		

Effect	Finding	With Mitigation	Mitigation Measure
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone WILD-MM-1: Document Special-Status Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Giant Garter Snake)	Significant	Less than significant	WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)	Less than significant	N/A	N/A
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Migratory Birds)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Burrowing Owl)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Other Species)	Less than significant	N/A	N/A
WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)

Two elderberry shrubs occur in the study area. One elderberry shrub (EB 146) occurs in the northwestern area of the project site within the Sacramento Bypass. This shrub occurs adjacent to an existing maintenance road (approximately 30 feet wide) utilized for levee maintenance and patrolling activities. Grading activities are proposed to occur down the levee slope to the toe of the levee, approximately 30 feet from the shrub. Hauling activities may occur adjacent to the shrub, but outside the dripline. The other shrub (EB 177) is in the southeast corner of the project area approximately 15 feet from the proposed construction limits, beneath a large oak tree; neither are expected to be removed or disturbed. Elderberry shrub survey results are shown in Table 4.12-3, below, and the locations of these shrubs are shown in Figure 4.12-1.

Table 4.12-3. Elderberry Shrub Survey Results

Elderberry Shrub/Cluster Number	Number of Stems > 1 Inch and < 3 Inches	Number of Stems > 3 Inches and < 5 Inches	Number of Stems > 5 Inches	Total Number of Stems	Exit holes N/Y
Riparian					
EB177	0	0	1	1	N
Non-Riparian					
EB 146	20	3	1	24	Y
Total	**20**	**3**	**2**	**25**	**N/A**

Complete avoidance of effects on VELB is assumed when a 100-foot buffer (from construction) is established around elderberry shrubs. Direct effects on VELB may generally occur if construction occurs within 20 feet of elderberry shrubs. Indirect effects on VELB may generally occur if elderberry shrubs are located from 20 to 100 feet of construction.

WSAFCA has coordinated with the USFWS and agreed to protective measures for these shrubs. The following measures will be implemented to avoid and minimize effects on VELB:

- Before ground disturbance, all construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the life history of VELB and the importance of its host shrub, the elderberry. Proof of this instruction will be submitted to the USFWS.
- For shrub EB 146, 100 feet of concrete barriers (K-rails) will be installed along the maintenance road in front of the shrub (50 feet west and 50 feet east of the shrub). Beyond the concrete barrier, temporary orange construction fencing (4-foot-high commercial-quality woven polypropylene) will be installed to completely surround the shrub and form 20-foot construction buffer on the north, east and west sides of the shrub. For shrub EB 177, a 20-foot temporary orange construction fence buffer will be installed around the shrub and any adjacent vegetation that requires protection (see Figure 4-2). Within buffer areas, signs will be posted along fencing for the duration of construction. The signs will contain the following information:

This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.

- Buffer area fences around elderberry shrubs/clusters will be inspected weekly by a qualified biologist during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs throughout construction. Biological inspection reports will be provided to the project lead and USFWS.
- WSAFCA will ensure that the project site will be watered down as necessary to prevent dust from becoming airborne and accumulating on elderberry shrubs in and adjacent to a project site.

Therefore, effects on VELB would be considered less than significant.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)

Although western pond turtle is not currently known to occur in the study area, there is potential for occurrence in the depressional wetland and surrounding riparian forest and in the open water areas. Although the project construction is limited to the toe of the Sacramento Bypass Levee, these features are located within 50 feet from the construction limit and therefore pond turtles using upland areas adjacent to aquatic features could be affected by project construction. Potential effects on this species include temporary disturbance to upland nesting or cover habitat and the potential for direct loss of individuals. Effects on western pond turtle would be considered significant. Implementation of Mitigation Measures VEG-MM-4, VEG-MM-5, WILD-MM-1, and WILD-MM-2 would reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zones

Mitigation Measure WILD-MM-1: Document Special-Status Wildlife Species and Their Habitat

WSAFCA will retain a qualified wildlife biologist to document the presence or absence of suitable habitat for special-status wildlife. The following steps will be implemented to document special-status wildlife and their habitats:

- **Review existing information**. The wildlife biologist will review existing information to develop a list of special-status wildlife species that could occur in the action area. The following information will be reviewed as part of this process: the USFWS special-status species list for the action region, DFG's CNDDB, previously prepared environmental documents, city and county general plans, habitat conservation plans and natural community conservation plans (if there are any adopted by the time the action is constructed), and USFWS-issued BOs for previous actions.

- **Coordinate with state and Federal agencies**. The wildlife biologist will coordinate with the appropriate agencies (DFG and USFWS) to discuss wildlife resource issues in the action region and determine the appropriate levels of survey necessary to document special-status wildlife and their habitats.
- **Conduct field studies**. The wildlife biologist will evaluate existing habitat conditions and determine what levels of biological survey may be required. The type of survey required will depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on the existing conditions in the action area and the proposed construction activity, one or a combination of the following levels of survey may be required:
    - **Habitat assessment.** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys will be required.
    - **Conduct species-focused surveys.** Species-focused surveys (or target species surveys) will be conducted if suitable habitat is present for special-status wildlife and it is necessary to determine the presence or absence of the species in the action area. The surveys will focus on special-status wildlife species that have the potential to occur in the region. The surveys will be conducted during a period when the target species are present and/or active.
    - **Conduct protocol-level wildlife surveys.** The program proponent will comply with protocols and guidelines issued by responsible agencies for certain special-status species. USFWS and DFG have issued survey protocols and guidelines for several special-status wildlife species that could occur in the study area, including (but not limited to) VELB, Swainson's hawk, western burrowing owl, and giant garter snake. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS- or DFG-approved biologist perform the surveys. The program proponent will coordinate with the appropriate state or Federal agency biologist before initiation of protocol-level surveys to ensure that the survey results will be valid. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period, and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species.

Mitigation Measure WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan

Preconstruction surveys for western pond turtles in suitable aquatic habitat and associated upland areas will be conducted by a qualified biologist 2 weeks before and 24 hours prior to the start of construction activities. A survey will consist of three visits within a 2-week period, preferably during the appropriate time of year (March through October) and day (early morning) to maximize the chances of observing a turtle.

If a turtle is located within 100 feet of the construction limit, exclusion fencing will be installed to prevent turtles from entering the construction area. If a turtle is observed in the construction area during construction, it will be allowed to move out of this area on its own or, if necessary, be relocated out of this area (with authorization from the DFG), and exclusion fencing will be installed to prevent the movement of turtles back into the construction area. Additionally, the construction

area will be clearly defined, using orange barrier fencing, to minimize disturbance to riparian vegetation which could be utilized by western pond turtle as upland habitat.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Giant Garter Snake)

Numerous occurrences of giant garter snake are reported in canals located within 10 miles of the study area with the closest occurrence located approximately 2 miles northwest of the study area. Giant garter snakes have potential to use aquatic habitat in the study area, including depressional wetland and open water areas. Upland areas adjacent to these aquatic habitats could also be used by giant garter snakes for basking, cover, and refuge areas. Construction is limited to the toe of the Sacramento Bypass Levee and would not affect adjacent aquatic habitat. However, because the toe of the levee is located within 200 feet of aquatic habitat there is some potential for garter snakes, if present, to seek refuge in burrows along the levee toe. Pursuant to on-site discussions with representatives of USFWS and DFG in December 2009, WSAFCA will implement the following measures to avoid and minimize effects on giant garter snake and their habitat:

- Before ground disturbance, all construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the life history of giant garter snakes and the importance of both aquatic and upland habitat areas. Proof of this instruction will be submitted to the USFWS.
- To reduce the likelihood of snakes entering these areas during construction activities, WSAFCA has agreed to install exclusion fencing along the depressional wetland and open water areas (areas within 200 feet of suitable habitat) (see Figure 4-2). The exclusion fencing will be installed during the active period for giant garter snakes (May 1 to October 1) to reduce the potential for direct loss of the species during this activity. The fencing will consist of 3- to 4-foot-tall erosion fencing buried at least 6 to 8 inches below ground level. The fencing will ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout construction. To ensure that construction equipment and personnel do not affect aquatic habitat for giant garter snake outside the construction corridor, a combination of K-rail fencing and orange barrier fencing will be erected (in addition to the exclusion fencing) to clearly define the aquatic habitat to be avoided.
- A USFWS-approved biologist will conduct a preconstruction survey in suitable habitat no more than 24 hours before construction. Prior to construction each morning, the biologist will survey for the presence of any giant garter snakes and inspect exclusion and orange barrier fencing to ensure they are both in good working order. The project area will be re-inspected whenever a lapse in construction activity of 2 weeks or more has occurred. If a snake is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed.
- Vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat will be limited to the minimum area necessary. Avoided giant garter snake habitat within or adjacent to the project area will be flagged and designated as an environmentally sensitive area, to be avoided by all construction personnel.
- The movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat will be confined to designated haul routes to minimize habitat disturbance.

Therefore, potential effects on this species include the temporary disturbance of less than 1 acre of upland habitat, which has potential to result in the loss of individuals. Effects on giant garter snake would be considered significant. Implementation of the agreed upon measures outlined above and Mitigation Measure WILD-MM-3 would reduce this effect to less than significant.

Mitigation Measure WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Compensation Plans for Species Listed under ESA or CESA

Based on the USFWS's 1997 Programmatic Formal Consultation for Giant Garter Snake the project would likely result in only Level 1 impacts, which are defined as those that result in minimal environmental effects, such as repair, rehabilitation, or replacement of previously authorized structures, and would not result permanent habitat loss and would result in temporary habitat disturbance not exceed 20 acres (U.S. Fish and Wildlife Service 1997). Required mitigation would therefore likely consist of restoration of temporary impacts to giant garter snake habitat and one year of monitoring, as described below.

- **Restoration.** After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.
- **Monitoring.** Restoration of habitat should be monitored for 1year following implementation. Monitoring reports documenting the restoration effort should be submitted to USFWS (1) upon completion of the restoration implementation, and (2) 1 year from restoration implementation. Monitoring reports should include photo documentation, when restoration was completed, what materials were used, plantings (if specified) and justification of any substitutions to USFWS-recommended guidelines. Monitoring reports should also include recommendations for remedial actions and approval from USFWS, if necessary, and justification from release of any further monitoring, if requested.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)

The study area contains suitable Swainson's hawk nesting and foraging habitat. Swainson's hawk foraging habitat consists of grassland areas along the levee toe and within the Sacramento Bypass. A total of 14 acres of grasslands occur within the construction area, including the staging area. Because the availability of foraging habitat has been closely tied to the breeding success of this species, projects that will significantly modify suitable Swainson's hawk foraging habitat are considered to have potential to significantly affect this species (California Department of Fish and Game 1994). However, because construction would only result in temporary disturbance to suitable foraging habitat for this species this effect is less than significant and no mitigation is needed.

In addition, Swainson's hawks are known to nest in and adjacent to the study area, and project construction within this reach could affect Swainson's hawk, either directly or through habitat modification. As noted in the Environmental Setting section, CNDDB has documented five Swainson's hawk nests in the study area (California Natural Diversity Database 2010). Suitable nesting habitat for Swainson's hawk occurs within the riparian forest adjacent to the depressional wetland. Although riparian forest would not be removed for project construction, project construction noise has potential to result in nest disturbance where nests are present in adjacent riparian forest areas. Additionally, removal of landscape trees and shrubs, or other vegetation

clearing, grading, or other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of Swainson's hawk.

To avoid and minimize effects to Swainson's hawk, WSAFCA representatives coordinated with DFG representatives during a field visit in December 2009, and agreed to implement the following measures:

- Before ground disturbance, all construction personnel will participate in a CDFG-approved worker environmental awareness program. A qualified biologist will inform all construction personnel about the life history of Swainson's hawk and the importance of nest sites and foraging habitat.
- A breeding season survey for nesting birds will be conducted for all trees and shrubs that will be removed or disturbed which are located within 500 feet (0.5 mile for Swainson's hawk) of construction activities, including grading. Swainson's hawk surveys will be completed during at least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30 with no fewer than three surveys completed in at least two survey periods, and with at least one of these surveys occurring immediately prior to project initiation (Swainson's Hawk Technical Advisory Committee 2000). Other migratory bird nest surveys can be conducted concurrent with Swainson's hawk surveys with at least one survey to be conducted no more than 48 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, can commence without any further mitigation.
- If active nests are found, WSAFCA will maintain a 0.25-mile buffer between construction activities and the active nest(s). In addition, a qualified biologist will be present on-site during construction activities to ensure the buffer distance is adequate and the birds are not showing any signs of stress. If signs of stress that may cause nest abandonment are noted, construction activities will cease until a qualified biologist determines that fledglings have left an active nest.

The implementation of these agreed upon measure would ensure that effects on Swainson's hawk will be less than significant.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Migratory Birds)

Several other special-status birds have potential to nest in or adjacent to the study area based on reported occurrences within a 10-mile radius. These species include white-tailed kite, northern harrier, loggerhead shrike, and purple martin.

These species are not reported to nest in the study area but are known to nest in the vicinity. Riparian forest and landscape tree areas adjacent to the construction area contain suitable nesting habitat for white-tailed kite and purple martin. Open grassland areas containing scattered shrubs and trees provide suitable nesting habitat for loggerhead shrike. Grasslands in the Sacramento Bypass area provide potential nesting habitat for northern harrier.

Tree and shrub removal, other vegetation clearing, grading, or other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of special-status birds, including species of special concern

(loggerhead shrike, northern harrier, and purple martin) and fully protected species (white-tailed kite), and other migratory birds protected under the MBTA and CFGC. Therefore, these effects would be considered significant. Implementation of Mitigation Measures Veg-4 and WILD-MM-4, described above, would reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Burrowing Owl)

Burrowing owl is reported to nest adjacent to the study area. In the study area, burrowing owls have potential to nest in grasslands and unvegetated areas along the Sacramento Bypass Levee where burrows or other nesting substrates are present. Construction activities, including grading and clearing activities within and adjacent to these lands cover types, could result in nesting failure, death of nestlings, or loss of eggs. Effects on a state species of special concern and species protected under the MBTA and CFGC are considered potentially significant. Implementation of Mitigation Measures VEG-MM-4, WILD-MM-2 and WILD-MM-3would ensure that project activities would not result in nesting disturbance or habitat loss for this species and reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan

In conformance with Federal and state regulations regarding the protection of raptors, a preconstruction survey for burrowing owls will be completed, in accordance with DFG guidelines described in the *Staff Report on Burrowing Owl Mitigation*, prior to the start of construction within suitable habitat and (where possible) in areas within 500 feet of the construction zone. Surveys should be conducted during the wintering (December 1 through January 31 recommended) and nesting (April 15 through July 15 recommended) seasons. Surveys should be conducted from 2 hours before sunset to 1 hour after, or from 1 hour before or 2 hours after sunrise. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if breeding or resident owls are located on, or immediately adjacent to, the site, the following measures will be implemented.

- No burrowing owls will be evicted from burrows during the nesting season (February 1 through August 31). Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the DFG authorizing the eviction.
- A 250-foot buffer, within which no new activity would be permissible, would be maintained between project activities and nesting burrowing owls. This protected area would remain in effect until August 31, or at the DFG's discretion and based on monitoring evidence, until the young owls are foraging independently.
- If accidental take (disturbance, injury, or death of owls) occurs, the DFG would be notified immediately.

Mitigation Measure WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA

If a preconstruction survey finds that burrowing owls occupy a project site, and occupied habitat will be converted to unsuitable habitat, habitat compensation on off-site mitigation lands will be implemented. Habitat management lands comprising existing burrowing owl foraging and breeding habitat will be acquired and preserved. An area of 6.5 acres (the amount of land found to be necessary to sustain a pair or an individual owl) will be secured for each pair of owls or for an individual, in the case of an odd number of birds.

Where construction would only temporarily modify occupied habitat but habitat value would return to the preproject condition, compensation would not be required.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)

Pallid bat, hoary bat, and western red bat are known to occur within the vicinity of the study and have potential to roost within riparian forests adjacent to the project site. Bat roosts of special-status species and non-special-status species are highly sensitive to disturbance and are considered a sensitive resource by DFG. Construction activities such as tree removal and trimming or construction noise could result in impacts on roosting bats, including the destruction of active roosts, the loss of individuals, or roost failure. In addition, nighttime construction activities could disturb bats emerging from nearby roosts resulting in the disruption of foraging activities. These effects could be considered significant if the subsequent population decline was large and affected the viability of the local populations of bats. Implementation of Mitigation Measures VEG-MM-4 and WILD-MM-5 would reduce this potential effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects

Prior to any tree trimming and removal or other construction activities, a qualified biologist should conduct a preconstruction survey to determine whether bats are present. The survey should consist of a nighttime emergence survey of suitable trees for evidence (presence of guano or urine stains) of use by bats, and it should be conducted no more than 14 days prior to construction activities. If the biologist determines that the area surveyed does not contain any active roosts, activities may commence without any further mitigation. If active roosts are found, roosting structures should be retained, and the need for a construction buffer should be determined through consultation with DFG. If avoidance is not possible, DFG may require that bats be excluded from the habitat prior to start of the breeding and/or hibernation season. Compensatory mitigation for the loss of roosting habitat also should be determined through consultation with DFG but may include the construction and installation of suitable replacement habitat on site.

Effect WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)

Numerous non-special-status bird species also have potential to nest in or adjacent to the study area. Examples of these include red-tailed hawk, red-shouldered hawk, great horned owl, and American kestrel.

Tree and shrub removal, other vegetation clearing, grading, or other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of migratory birds protected under the MBTA and CFGC. Therefore, these effects would be considered significant. Implementation of Mitigation Measures Veg-4 and WILD-MM-4, described above, would reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds

Effect WILD-3: Disturbance to or Loss of Common Wildlife Species as a Result of Construction (Other Species)

The study area contains both natural and constructed habitats that support numerous common species. These species include a wide variety of terrestrial and aquatic invertebrates, birds and raptors, amphibians, reptiles, and mammals. Although nesting migratory birds and bats would be protected from nesting disturbance through implementation of Mitigation Measure WILD-MM-1, WILD-MM-2, and WILD-MM-5, other species may be harmed or killed during construction. Other than nesting migratory birds and bats, other common wildlife species are not afforded protection under CEQA or NEPA because they are considered to be widespread and abundant. Effects on these species are therefore considered to be less than significant. No mitigation is required.

Effect WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction

In the study area, the Sacramento Bypass Levee may act as a movement corridor for wildlife. During construction of levee improvements, movement through the project site would be temporarily impeded by the placement of physical barriers (fencing) used to protect resources outside of the construction footprint but movement would be restored to the pre-project condition following construction. Therefore, disruption of movement through the project site is less than significant, and no mitigation is needed.

4.12.3.3 CHP Academy Alternative B

With respect to wildlife resources, the construction corridor and construction-related effects associated with CHP Academy Alternative B are the same as those described above for the CHP Academy APA. In the interest of brevity, effects discussions and mitigation measures are not repeated here.

Section 4.13
Land Use and Agriculture—CHP Academy Early Implementation Project

4.13.1 Affected Environment

This section describes the affected environment for land use and agriculture in the CHP Academy EIP project area, including the regulatory and environmental setting.

4.13.1.1 Regulatory Environment

4.13.1.1.1 Federal

The following Federal policies related to land use and agriculture may apply to implementation of the CHP Academy EIP. Please see Section 3.11.2.1, Regulatory Setting, for a more complete description of each policy.

- Farmland Protection Policy Act
- Federal Farmland Designations

4.13.1.1.2 State

The following state policies related to land use and agriculture may apply to implementation of the CHP Academy EIP. Please see Section 3.1.2.1, Regulatory Setting, for a more complete description of each policy.

- Williamson Act

4.13.1.1.3 Local

The following local policies related to land use and agriculture may apply to implementation of the CHP Academy EIP. Please see Section 3.11.2.1, Regulatory Setting, for a more complete description of each policy.

- Delta Protection Commission
- *Yolo County General Plan*
- *City of West Sacramento General Plan*

4.13.1.2 Environmental Setting

This section discusses the environmental setting related to land use and agriculture in the CHP Academy EIP project area.

The CHP Academy lies directly south of the Sacramento Bypass Levee, and directly east of the Sacramento River North Levee. The academy has a gymnasium, auditorium, quarter-mile track, obstacle course, jogging trails, dormitories, classrooms, a large water safety tank, an indoor and

outdoor shooting range, and a driving track. The academy trains cadets and provides specialized departmental training courses for other law enforcement agencies (California Highway Patrol 2008). The City of West Sacramento has zoned this area as public-quasi public (City of West Sacramento 2009). The CHP Academy is the only employer that has facilities that lie within, or adjacent to, the project site.

The Sacramento Bypass Wildlife Area lies north of the project site, in Yolo County and outside the city limits of West Sacramento. The area is owned by DFG. The area is 360 acres and is an important cover and feeding area for wildlife during late fall, winter, and early spring. The Sacramento Bypass receives overflow from the Sacramento River during periods of high precipitation. Hunting is allowed between September 1 and January 31. Fishing, hunting, and bird watching are also allowed (California Department of Fish and Game 2008).

The section of land located in the northeast corner of the project area is designated for agricultural use; however, it is not currently being used for that purpose. Additionally, it is not considered to be prime farmland, unique farmland, or farmland of statewide importance. The parcel of land is not part of a Williamson Act contract.

4.13.2 Environmental Consequences

This section describes the environmental consequences relating to land use and agriculture for the CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.11.3.3, Effects and Mitigation Measures.

4.13.2.1 Assessment Methods

This evaluation of land use and agriculture is based on a review of the regulatory setting above, review of the project in regard to compliance with Federal, state and local land use plans and regulations, and field observations. Key effects were identified and evaluated based on the environmental characteristics of the CHP Academy EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

4.13.2.2 Determination of Effects

For this analysis, an effect pertaining to land use and agriculture was analyzed under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.*), and standards of professional practice.

For land use, an effect would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

For agriculture, an effect would:

- convert prime farmland, unique farmland, or farmland of statewide importance;
- conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- involve other changes in the existing environment, which because of their location or nature, could result in conversion of farmland to non-agricultural use.

4.13.3 Effects and Mitigation Measures

4.13.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to land use and agriculture such as conversion of farmland or changes in land zoning would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Land Use program analysis (Section 3.11.3.3.1). In summary, these effects could include temporary and permanent reduction in agricultural productivity, conversion of land from its designated use, and physical division of established communities. In addition, if the Sacramento Bypass Levee were to fail, the CHP Academy itself would be in the direct line of floodwaters.

If the CHP Academy were inoperable for any length of time due to flood inundation, safety services could be compromised in the city and surrounding areas for an undefined period of time.

4.13.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effect on land use and agriculture. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than significant	N/A	

Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction

During construction of the CHP Academy APA, a staging area to house construction equipment and materials would be necessary (see Figure 4-1 for the location of the staging area). Temporary earthen ramps would also be constructed to allow equipment in the bypass to facilitate access between the levee crown and staging area. The area to be used for construction staging and stockpiling is located in the Sacramento Bypass and is currently subject to open space use, and the construction and access areas are located on lands zoned Public/Quasi-Public by the City of West Sacramento (see Figure 3.11-1). These lands are not heavily used and will be returned to their

original uses following the completion of construction. Thus, the CHP Academy APA would not result in significant effects on land use as a result of temporary land use changes. This effect is considered less than significant. No mitigation is required.

4.13.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effect on land use and agriculture. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than significant	N/A	

Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction

This effect is the same as described above under the CHP Academy APA. This effect is considered less than significant. No mitigation is required.

Section 4.14

Socioeconomic and Community Effects—CHP Academy Early Implementation Project

4.14.1 Affected Environment

This section describes the affected environment for socioeconomic and community effects in the CHP Academy EIP project area, including regulatory and environmental setting.

4.14.1.1 Regulatory Environment

The following policies related to socioeconomics and the community may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.12.2.1, Regulatory Setting, for a more complete description of each policy.

4.14.1.1.1 Federal

- Uniform Relocation Assistance and Real Property Acquisition Policies Act

4.14.1.1.2 State

- Relocation Assistance and Property Acquisition

4.14.1.1.3 Local

- *City of West Sacramento General Plan*

4.14.1.2 Environmental Setting

This section discusses the environmental setting related to socioeconomic and community effects in the CHP Academy EIP project area.

A regional socioeconomic and community setting for the CHP Academy EIP project area is described in Section 3.12.2.2, Affected Environment. Additional details relevant to the analysis of socioeconomic and community effects at the CHP Academy EIP project area are listed below.

- No residences are located within or adjacent to the CHP Academy EIP project area and no relocation of residents would be required.
- No land in agricultural production is located within or adjacent to the CHP Academy EIP project area and no disruptions to agricultural production (either temporary or permanent) would occur as a result of construction or maintenance.
- As described in Section 3.15, Recreation, a minimal amount of recreational activity presently occurs in the Sacramento Bypass Levee reach, so implementation of an EIP project at the CHP Academy site would not affect recreation-related business.

4.14.2 Environmental Consequences

This section describes the environmental consequences relating to socioeconomics and the community for the CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.12.3.3, Effects and Mitigation Measures.

4.14.2.1 Assessment Methods

Effects on socioeconomics and the community were evaluated qualitatively based on the criteria listed below in Determination of Effects. Additionally, the CHP Academy EIP was evaluated for consistency with relevant local plans and policies at the Federal, state and local level.

4.14.2.2 Determinations of Effects

For this analysis, an effect pertaining to socioeconomics or the community was analyzed under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice:

- a substantial change in employment;
- inducement of substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure); or
- displacement of substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

4.14.3 Effects and Mitigation Measures

4.14.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to socioeconomics or the community would occur and there would be no changes in existing population or employment, except for the changes currently planned for in the appropriate local and state planning documents. No displacement of existing residences to accommodate an expanded levee footprint for certain levee alternatives would occur. Therefore, there would be no effect on this resource under the No Action Alternative.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Socioeconomic and Community Effects program analysis (Section 3.12.4.1). To summarize the program analysis, should

a levee failure and associated flooding occur at this site, there could be widespread temporary or permanent displacement of residents. Damages suffered from flooding could lead to the long-term disruption of industrial, agricultural and retail economic activities within the city of West Sacramento and within the greater Sacramento region. Dependent on the degree of damage caused, disruption of activities could lead to a reduction in employment and short- to long-term depressed economic conditions citywide resulting from damage to industrial, retail and agricultural facilities and major transportation facilities that support their activities. These effects on socioeconomic conditions would be significant. Post-flooding conditions could result in short-term increases in employment for post-flooding cleanup and restoration activities, but these increases would not likely offset the potential losses.

4.14.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effect on socioeconomics. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A

Effect SOC-4: Temporary Increase in Employment in the Region during Construction

Construction activities associated with implementation of the CHP Academy EIP would temporarily increase employment and personal income in the local area. Preliminary cost estimates anticipate that total construction-related expenditures associated with the CHP Academy APA would be approximately$5,000,000 to $10,000,000 (Vecchio pers. comm.), occurring in 2011. This is an estimate of direct costs only, and does not include indirect/induced changes in employment and personal income resulting from project construction. Project construction would benefit the local economy by temporarily increasing employment and personal income, although the increase in employment is not considered substantial when compared to total employment within the region. This effect on employment, however, would be beneficial.

4.14.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effect on socioeconomics. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A

Effect SOC-4: Temporary Increase in Employment in the Region during Construction

Construction-related expenditures and employment estimates associated with CHP Alternative B have not been calculated, but are anticipated to be similar to the numbers presented for the CHP Academy APA. Project construction would benefit the local economy by temporarily increasing employment and personal income, although the increase in employment is not considered substantial when compared to total employment within the region. This effect on employment, however, would be beneficial.

Section 4.15
Environmental Justice—CHP Academy Early Implementation Project

4.15.1 Affected Environment

This section describes the affected environment for environmental justice in the CHP Academy EIP project area, including regulatory and environmental setting.

4.15.1.1 Regulatory Environment

4.15.1.1.1 Federal

The following Federal policy related to environmental justice may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.13.2.1, Regulatory Setting, for a more complete description of each policy.

- Federal Executive Order 12898, Environmental Justice

4.15.1.1.2 State

The following state policies related to environmental justice may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.13.2.1, Regulatory Setting, for a more complete description of each policy.

- State of California environmental justice regulations passed in 2001. These laws define environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

4.15.1.2 Environmental Setting

This section discusses the environmental setting related to environmental justice in the CHP Academy EIP project area.

4.15.1.2.1 Study Area Demographics

The study area is in the city of West Sacramento, in Yolo County. For comparison, the same demographic information presented for West Sacramento is also presented for Yolo County and the State of California.

4.15.1.2.2 Local Setting

In 2000, Caucasians and Asians made up the largest two populations in the state, accounting for 59.5% and 10.9% of the population, respectively, while 16.8% of respondents claimed "other race." Those of Hispanic origin made up 32.4%, almost one-third of the State's population (U.S. Census 2008).

In 2000, Caucasians and Asians made up the largest two populations in Yolo County, accounting for 67.7and 9.9% respectively, while 13.8% of respondents claimed "other race." Those of Hispanic origin made up 25.9% of Yolo County (U.S. Census 2008).

In 2000, Caucasians and Asians made up the largest two populations in the city of West Sacramento accounting for 65% and 7.2% of the population respectively, while 16% claimed "other race." Those of Hispanic origin made up 30% of the city (U.S. Census 2008). Table 4.15-1 compares data regarding race in the study area in 2000 and 2005. Table 4.15-2 compares the household poverty status by city, county, and state.

Table 4.15-1. Race/Origin Characteristics by City/County/State, 2000 and 2005

	2000			2005		
	City of West Sacramento (percentage)	Yolo County (percentage)	State of California (percentage)	City of West Sacramento (percentage)	Yolo County (percentage)	State of California (percentage)
Race						
White	65.0	67.7	59.5	65.0	67	59.5
Black or African American	2.6	2	6.7	2.6	2	6.7
American Indian and Alaska Native	1.8	1.2	1.0	1.8	1	1.0
Asian	7.2	9.9	10.9	7.2	11	10.9
Native Hawaiian, other Pacific Islander	0.6	0.3	0.3	0.6	0.08	0.3
Some Other Race	16.0	13.8	16.8	16.0	12	16.8
Two or more races	6.9	5.2	4.7	6.9	5	4.7
Origin						
Hispanic	30.0	25.9	32.4	30.0	27.8	32.4

Source: U.S. Census Bureau 2000 and 2005 American Community Survey.

Table 4.15-2. Household Poverty Status by City/County/State, 2000

City	City of West Sacramento	Yolo County	State of California
Percent below poverty level	22.3	18.4	14.2

Source: U.S. Census Bureau 2000; California Employment Development Department 2000.

4.15.2 Environmental Consequences

This section describes the environmental consequences relating to environmental justice for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.13.3.3, Effects and Mitigation Measures.

4.15.2.1 Assessment Methods

The population data that are pertinent to the analysis of environmental justice include race, income, and age characteristics such as:

- the percent of minority population (Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, some other race, and two or more races);
- the percent of persons of Hispanic origin;
- the percent of population below the poverty level; and
- the percent of population residing below the U.S. Census Bureau poverty threshold, defined as a single person with an income below $8,840, or a family of four with an income below $16,588.

Proposed project environmental justice effects were analyzed by comparing census data from the local setting and regional setting with data for the State of California.

4.15.2.2 Determination of Effects

Effects pertaining to environmental justice were considered significant if the program would result in a disproportionate effect on minority or low-income communities.

4.15.3 Effects and Mitigation Measures

4.15.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Environmental Justice program analysis (Section 3.13.3.3.1). In summary, a catastrophic flood event would likely affect populations of all income and ethnic classifications and would not result in a disproportionately high or significant effect on minority or low-income populations.

4.15.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effect on environmental justice. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	

Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations

The CHP Academy APA would reduce the risk of flooding to existing residential, commercial, and industrial development in the WSAFCA service area. While there are low-income and minority populations present throughout the study area, the flood protection benefits of the project would reach all segments of the population in the city of West Sacramento.

Section 4.9 anticipates that sensitive receptors could be exposed to significant levels of temporary construction-related noise along CHP Academy APA haul routes. However, there are few residences located along Reed Avenue and Harbor Boulevard, and the residences that do exist along these routes are not disproportionately low-income or minority (US Environmental Protection Agency 2009). Furthermore, these noise effects would be temporary. The City of West Sacramento has identified these roads as designated haul routes in the General Plan, and no other routes may be used.

The CHP Academy APA construction area itself is not located in or near a residential area. No residents would be displaced due to construction or operation of the CHP Academy APA, nor would the project physically divide an established community. The CHP Academy APA would therefore not result in a significant disproportionate effect on minority or low-income populations.

4.15.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effect on environmental justice. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	

Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations

This effect is the same as described above under the CHP Academy APA. The CHP Academy Alternative B would not result in a significant disproportionate effect on minority or low-income populations.

Section 4.16
Visual Resources—
CHP Academy Early Implementation Project

4.16.1 Affected Environment

This section describes the affected environment for visual resources in the CHP Academy EIP project area, including regulatory and environmental setting.

4.16.1.1 Regulatory Setting

4.16.1.1.1 Local

The following local policies related to visual resources may apply to implementation of the CHP Academy EIP. Please see Section 3.14.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

4.16.1.2 Environmental Setting

This section discusses the environmental setting related to visual resources in the CHP Academy EIP project area.

4.16.1.2.1 Sacramento Bypass Levee

The Sacramento Bypass consists primarily of open space and flood conveyance land uses. No development or agricultural activities occur within the bypass. Agricultural land, planted with row crops, borders the Sacramento Bypass to the north, southwest, and west. The Sacramento River serves as its eastern boundary, and the CHP Academy and industrial land uses are located to the south. While few activities take place within the bypass (i.e., hunting occurs during the appropriate seasons), its levees are used for recreation.

Viewers using the levees of the bypass have expansive views that, when haze is at a minimum, extend over agricultural fields in the foreground to the middleground and background. The high-rise buildings of downtown Sacramento can be seen in the middleground, rising up above the tree line. Background views to the Sierra Nevada foothills to the east are rarer, while views of the Sutter Buttes to the north are more common. Some views are obscured by vegetation along the levees of the bypass and the CHP Academy, limited in certain directions to the foreground, depending on the viewer's location. Views also differ seasonally, offering more or fewer views when vegetation is dormant or in leaf.

While the visual quality of the bypass itself is moderate, the views offered from it are moderately high. Appealing views of the bypass and Sacramento cityscape present both rural and urban scenes that are attractive. Views from the Sacramento Bypass Levee are moderately high in vividness. The

artificial intrusions associated with the surrounding development and infrastructure are moderate, resulting in moderate intactness. The visual quality of the area is also moderate in unification because the landscape is disjunctive in its abrupt changes in land use.

4.16.1.2.2 Viewer Groups

The primary viewer groups in the CHP Academy study area are persons living or conducting business near levees; travelers using the interstates, highways, and smaller local roads (including those on levee crowns), those affiliated with Riverbank Elementary School; and recreationists (boaters, beachgoers, and fishermen using canals, creeks, and rivers; trail users; equestrians; bicyclists; joggers; etc.). All viewer groups have direct views of the study areas.

Residents

There are no residences in the immediate vicinity of the CHP Academy EIP project area. However, residents in Sacramento, across the Sacramento River from the project area, have limited views of the project area from their residences that are obstructed to varying degrees by riparian vegetation. Most suburban residences in the city of West Sacramento are located southeast of the site. Although there are no residences in the immediate vicinity, both suburban and rural residents in West Sacramento are likely to have a high sense of ownership over their waterways, the open space that surrounds them, the recreational opportunities they provide, and their inherent scenic quality. Because of their potential feeling of ownership, and exposure to project site views in transit or while enjoying recreation along the Sacramento Bypass Levee, these residents are considered to have high sensitivity to changes in the viewshed.

Businesses

There are no business facilities in the immediate vicinity of the CHP Academy project area. Viewers from the CHP Academy EIP have semi-permanent views of the project site from their facility some as close as about 100 feet away from the outer edge of the project's construction footprint. Views from the facility range from limited by trees or distance when viewing from the eastern side of the facility, to sweeping views that include the expanse of the Sacramento Bypass when viewing from the west side of the facility. Employees and users of this facility are likely to be occupied with their work activities and tasks at hand and less focused on taking advantage of their view. Due to limited viewing times and their focus on work-related tasks, this viewer group is considered to have moderate sensitivity to changes in views.

Roadways

The majority of roadway viewers would view the site from Old River Road, which runs perpendicular to the Sacramento Bypass Levee. Many people affiliated with the CHP Academy likely travel to and from the facility on this road. Views here are of the foreground, middleground, and background inclusive of the Sacramento Bypass, the Sacramento River, and the project site on the bypass levee.

Travelers use roadways at varying speeds; normal roadway speeds differ based on the traveler's familiarity with the route and roadway conditions (i.e., presence/absence of rain, sleet, etc.). Single views typically are of short duration; however, on roads that are very straight, such as Harbor Boulevard/Old River Road, views are longer.

Viewers who frequently travel routes generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with a high regard and as a holistic visual experience. Furthermore, there are scenic stretches of roadway passing through the project area that offer sweeping views of the surrounding area that are of interest to motorists (such as the Sacramento River). For these reasons, viewer sensitivity is moderate among most roadway travelers.

Recreationists

Recreational users view the project area from waterways, roadways, trails, and from the levees themselves. Recreational uses consist of boating and fishing along the Sacramento River, hunting in the bypass, bird watching, walking, running, and jogging along the Sacramento Bypass Levee crown and nearby roads. Waterway users on the Sacramento River would largely have views of the riparian vegetation along the river corridor, obstructing their view of the project site. The vegetation present along the levees creates a softened, natural edge that is enjoyed by all recreationists. Local recreationists also have a high sense of ownership over the waterways and corridors they use for recreation (including levees), being that these areas are highly valued throughout the greater Sacramento area.

Viewer sensitivity is high among recreationists in the project area because they are more likely to value the natural environment highly, appreciate the visual experience, have a high sense of ownership, and be more sensitive to changes in views.

4.16.2 Environmental Consequences

This section describes the environmental consequences relating to visual effects for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.14.3.3, Effects and Mitigation Measures.

4.16.2.1 Assessment Methods

The key effects were identified and evaluated based on the environmental characteristics of the CHP Academy EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

This evaluation of visual effects is based on:

- direct field observation from vantage points, including neighboring buildings, property, and roadways (conducted November 28, 2007, February 5, 2009, and Sept. 2009);
- photographic documentation of key views;
- professional standards (for discussion on these standards see Section 3.14.3.2.1);

- review of project construction drawings; and
- review of the project with regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.

4.16.2.2 Determination of Effects

For this analysis, an effect pertaining to visual resources was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.):

- cause a substantial, demonstrable negative aesthetic effect on a scenic vista or view open to the public;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime public views.

4.16.3 Effects and Mitigation Measures

4.16.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to visual resources would occur. Therefore there would be no effect on this resource attributable to implementation of the No Action Alternative.

However, without levee improvements there is the continued risk of levee failure and levee deterioration would continue to occur, and the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Visual Resources program analysis (Section 3.14.3.3.1). A catastrophic levee failure would result in flooding and inundation that could significantly damage existing visual resources. Flood-fight or cleanup activities could introduce new visual elements into the project area. In addition, the bypass levee itself would be damaged irreparably or for an extended period of time which would remove a scenic vista the enjoyment derived by recreationists when viewing nature and wildlife scenery. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on visual resources cannot be quantified based on available information.

Little to no vegetation will be removed at the CHP Academy EIP project area to comply with the USACE vegetation policy as there is very little woody vegetation within the specified corridor.

4.16.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on visual resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VIS-2: Create a New Source of Light or Glare	Significant	Significant and unavoidable	No feasible mitigation
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A

Effect VIS-2: Create a New Source of Light or Glare

The CHP Academy APA would not add any new permanent source of light or glare. It is expected that construction would occur at night, requiring temporary nighttime lighting. Equipment staging areas also would be lit at night for security reasons. Such nighttime lighting would be temporary through the duration of construction. The nearest residences to the CHP Academy APA project area are located to the east, across the Sacramento River in the Natomas Garden Highway area. There are also dormitories at the CHP academy, and the Academy also holds occasional nighttime training exercises. This would significantly affect the viewshed of the Garden Highway residents and CHP Academy attendees as they are not accustomed to nighttime glare of this degree. This effect would be significant and unavoidable.

Effect VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities

CHP Academy APA construction activities would introduce considerable heavy equipment and associated vehicles into the views of residents in the Garden Highway area of Natomas, recreationists, motorists, and of the CHP Academy itself. The equipment would be visible throughout the construction season. Presence of the equipment would temporarily degrade the visual quality of the project area to low vividness, intactness, and unity.

Residential viewers in the Garden Highway area across the Sacramento River from the CHP Academy APA site are likely not accustomed to seeing construction activities and equipment, and sensitivity to such effects would be high. Other viewer groups are more accustomed to seeing construction activities and equipment from construction that has occurred in the business parks near the I Street Bridge, daily activities in the industrial areas, and local roadway construction projects and would have low sensitivity to construction effects.

However, because this effect is temporary, would last no longer than the construction duration, and is limited a small area, it would not substantially degrade the overall visual quality in the study area. In addition, the implementation of an environmental commitment to provide temporary construction barriers, as needed, between construction zones and residences, as described in Section 2.9 of Chapter 2, Alternatives, would make this effect less than significant.

In addition, effects on roadway users would be less than significant because of the short intervals of time that they are in visual contact with the program reaches and familiarity with construction along other roadways in the vicinity.

4.16.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on visual resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VIS-2: Create a New Source of Light or Glare	Significant	Significant and unavoidable	No feasible mitigation
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A

Effect VIS-2: Create a New Source of Light or Glare

This effect is the same as described above under the CHP Academy APA. The CHP Academy Alternative B would create a new source of light and glare that would result in a significant and unavoidable effect on local residents.

Effect VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities

This effect is the same as described above under the CHP Academy APA. Construction of the CHP Academy Alternative B would temporarily degrade the visual quality of the project area to low vividness, intactness, and unity. However, because this effect is temporary, would last no longer than the construction duration, and is limited a small area, it would not substantially degrade the overall visual quality in the study area. In addition, the implementation of an environmental commitment to provide temporary construction barriers, as needed, between construction zones and residences, as described in Section 2.9 of Chapter 2, Alternatives, would make this effect less than significant.

Section 4.17
Recreation—
CHP Academy Early Implementation Project

4.17.1 Affected Environment

This section describes the affected environment for recreation in the CHP Academy EIP project area, including regulatory and environmental setting.

4.17.1.1 Regulatory Setting

4.17.1.1.1 Federal and State

No Federal or state plans, policies, regulations, or laws related to recreation resources apply to the CHP Academy EIP.

4.17.1.1.2 Local

The following local plans related to recreation apply to implementation of the CHP Academy EIP. Please see Section 3.14.2.1, Regulatory Setting, for a more complete description of each plan.

- *City of West Sacramento General Plan*
- *City of West Sacramento Parks Master Plan*
- *West Sacramento Bicycle and Pedestrian Path Master Plan*
- *Yolo County General Plan*

4.17.1.2 Environmental Setting

Very little known recreational use occurs in the vicinity of the Sacramento Bypass Levee. Occasional visitors park in the gravel area just south of the Sacramento Weir and west of Old River Road and walk into the Sacramento Bypass to fish (Shpak pers. comm. 2009). There are no formal recreation facilities on the Sacramento Bypass Levee.

4.17.2 Environmental Consequences

This section describes the environmental consequences relating to recreation resources for the CHP Academy EIP. It describes the methods used to determine the effects of the proposed project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.15.3.3, Effects and Mitigation Measures.

4.17.2.1 Assessment Methods

Effects on recreation related to implementation of the CHP Academy EIP were evaluated qualitatively. Generally, construction activities could result in a short-term loss of recreation opportunities by disrupting use of recreation areas or recreational boating corridors. A long-term effect could occur if a recreation opportunity is eliminated or the quality of that opportunity is severely reduced as a result of permanent program-related structures or operations. Long-term beneficial effects could occur if new or enhanced recreation opportunities are created through implementation of the project.

4.17.2.2 Determination of Effects

For this analysis, an effect pertaining to recreation was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.):

- increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated;
- include recreation facilities or require the construction or expansion of recreation facilities that might have a significant physical effect on the environment;
- substantially restrict or reduce the availability or quality of existing recreation opportunities in the project vicinity; or
- implement operational or construction-related activities related to the placement of project facilities that would cause a substantial long-term disruption of any institutionally recognized recreation activities. Institutionally recognized recreation activities are those associated with an established publicly or privately operated recreation facility, or those actively administered or promoted by a public or private entity.

4.17.3 Effects and Mitigation Measures

4.17.3.1 No Action Alternative

The No Action Alternative would continue the existing deficiencies along the portion of the Sacramento Bypass Levee reach encompassed by the CHP Academy EIP project area (i.e., no levee improvements would be implemented). This means continued or even potentially increased risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues, Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the recreation program analysis (Section 3.15.3.3.1). A catastrophic levee failure would result in flooding and inundation that could significantly damage existing facilities and infrastructure and erode soil, uproot plants, and otherwise damage substrate by hydraulic force. This would render recreation facilities, informal recreation areas, and trails unusable until cleanup and restoration activities could be undertaken. It is possible that after a catastrophic flood event, recreation facilities may never be fully restored to their former condition, permanently reducing the quality and/or quantity of recreation opportunities in the area. In addition, scenic vistas for existing and future recreation facilities could be damaged irreparably or for an extended period of time which would reduce the enjoyment

derived by recreationists. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on recreation cannot be quantified based on available information. Further discussion of the effects of the No Action Alternative is provided above in Program Environmental Consequences. Little to no vegetation will be removed at this EIP site to comply with the USACE vegetation policy under the No Action Alternative as there is very little woody vegetation within the specified corridor.

4.17.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on recreation. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A

Effect REC-1: Temporary Disruption of Recreation Opportunities during Construction

No formal recreation facilities are located along the Sacramento Bypass Levee, although occasional visitors use the levee to access the bypass itself for fishing or wildlife viewing. Temporary disruption of access along the Sacramento Bypass Levee would occur during construction activities when the levee crown and adjacent construction and staging areas are closed to public access. Even if the recreation areas themselves are not closed, proximity to construction equipment and activities may degrade recreational experiences. However, this effect is temporary and there are alternative locations for fishing within the city. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives), this effect would be less than significant. No mitigation is required.

Effect REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor

The Sacramento Bypass Levee is, in general, already maintained to the new USACE standard for vegetation on levees, and full compliance with the policy would not require the removal of much additional woody vegetation. However, the proposed slope flattening would require the levee footprint to be expanded landward and therefore extend the zone that must be maintained free of woody vegetation. This may require removal of some mature trees from the CHP Academy APA project area. However, because the trees are part of an already marginal view of CHP Academy facilities and are currently inaccessible to visitors due to fencing, and because the Sacramento Bypass Levee is not known as a wildlife viewing spot, this effect would be less than significant. No mitigation is required.

Effect REC-6: Long-Term Increase in Recreation Opportunities

A paved pedestrian and bicycle trail would be constructed atop the Sacramento Bypass Levees as part of the CHP Academy APA. Although this segment is not part of the larger recreational corridor system proposed in the Parks Master Plan, this area is currently underutilized and construction of a trail in this area would improve recreation corridor connectivity and expand recreation opportunities in West Sacramento. It would also advance the policies of some of the planning documents listed above in the "Regulatory Setting" section. This effect is considered beneficial.

4.17.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on recreation. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A

Effect REC-1: Temporary Disruption of Recreation Opportunities during Construction

This effect is the same as described above under the CHP Academy APA. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives), temporary disruption of recreation opportunities at the CHP Alternative B site would be less than significant. No mitigation is required.

Effect REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor

The Sacramento Bypass Levee is, in general, already maintained to the new USACE standard for vegetation on levees, and full compliance with the policy would not require the removal of much additional woody vegetation. However, the proposed stability berm would require the levee footprint to be expanded landward and therefore extend the zone that must be maintained free of woody vegetation. This may require removal of some mature trees from the CHP Academy Alternative B project area. However, because the trees are part of an already marginal view of CHP Academy facilities and are currently inaccessible to visitors due to fencing, and because the Sacramento Bypass Levee is not known as a wildlife viewing spot, this effect would be less than significant. No mitigation is required.

Effect REC-6: Long-Term Increase in Recreation Opportunities

This effect is the same as described above under the CHP Academy APA. This effect is considered beneficial.

Section 4.18
Utilities and Public Services—CHP Academy Early Implementation Project

4.18.1 Affected Environment

This section describes the affected environment for utilities and public services in the CHP Academy EIP project area, including regulatory and environmental setting.

4.18.1.1 Regulatory Setting

4.18.1.1.1 State

The following state policies or agencies related to utilities and public services may apply to implementation of the CHP Academy EIP. Please see Section 3.16.2.1, Regulatory Setting, for a more complete description of each policy.

- California Public Utilities Commission
- California Integrated Waste Management Act

4.18.1.1.2 Local

The following local policies related to utilities and public services may apply to implementation of the CHP Academy EIP. Please see Section 3.16.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*

4.18.1.2 Environmental Setting

This section discusses the environmental setting related to utilities and public services in the CHP Academy EIP project area.

4.18.1.2.1 Utilities and Service Systems

Table 4.18-1 lists aboveground and underground utilities in the CHP Academy EIP project area.

Table 4-18-1. Utilities Located in the CHP Academy Project Area

Approximate Stations	Utility	Size	Owner
14+00–64+78	Pole Line	N/A	PG&E
47+00–64+78	N/A	N/A	AT&T
50+50	Electric	N/A	PG&E
63+43	Culvert	30 inches	N/A
64+10	Electric	N/A	PG&E
64+10–64+78	Telephone Conduit	N/A	AT&T or Verizon
64+78	Fiber Optic Line	N/A	MCI, Level 3, Williams Communication

Source: HDR 2007 (Appendix D).

4.18.1.2.2 Public Services

Fire Protection

The City's Fire Department has the mission of protecting life, environment, and property within the city of West Sacramento. The primary fire station servicing the CHP EIP project area is Station 44 (Moore pers. comm.) It is open 24 hours a day, 7 days a week. Firefighters work 48-hour tours of duty (City of West Sacramento).

Police Protection

The Police Department provides a full range of police services to the residents of West Sacramento 24 hours a day, 7 days a week.

The Police Department is staffed with 75 sworn officers and 39 civilian full-time employees. Other positions include part-time police officers, parking enforcement officers, reserve police officers, and volunteers.

The department is broken into three geographic "beats". Beat 1 patrols the northern portion of the City including the Bryte and Broderick areas, and is responsible for the CHP Academy EIP project area. Beat 2 encompasses the central City along West Capitol Avenue and Beat 3 is responsible for the Southport area (Arsenault pers. comm.)

Emergency Medical Services

No hospitals are located within the city of West Sacramento. The nearest hospital is Sutter General Hospital, which is 3.7 miles from West Sacramento at 29th Street in Sacramento.

4.18.2 Environmental Consequences

This section describes the environmental consequences relating to utilities and public services for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation,

and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.16.3.3, Effects and Mitigation Measures.

4.18.2.1 Assessment Methods

This evaluation of utilities and public services is based on information obtained from:

- review of relevant documents and Web sites to obtain information regarding known public services and utilities in the study area,
- analysis of geographic map research to determine locations of existing utilities and public services for program components, and
- telephone calls and e-mail correspondence to area utility/service providers.

4.18.2.2 Determination of Effects

For this analysis, an effect pertaining to utilities and public services was analyzed under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.*), and standards of professional practice:

- require the construction or expansion of electrical or natural gas transmission or distribution facilities;
- require the construction or expansion of a water conveyance or wastewater treatment facility or require new or expanded water supply entitlements;
- require the construction of new or expanded stormwater drainage facilities;
- require the construction or expansion of wastewater treatment facilities;
- cause the capacity of a solid waste landfill to be reached sooner than it would without the program;
- require the construction or expansion of communications facilities (telephone, cell, cable, satellite dish);
- significantly affect public utility facilities that are located underground or aboveground along the local roadways from program construction activities;
- create an increased need for new fire protection, police protection, or ambulance services or significantly affect existing emergency response times or facilities; or
- intersect with major infrastructure components, such as bridges or overpasses, requiring relocation of the components.

4.18.3 Effects and Mitigation Measures

4.18.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements

would be made to increase the level of protection. No construction-related effects relating to utilities or service systems would occur and none of these services would therefore be interrupted or damaged. Therefore, there would be no effect on this resource under the No Action Alternative.

However, because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability and geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Utilities and Public Services program analysis (Section 3.16.3.3.1).

In summary, those effects could include destruction, damage, or contamination of water delivery infrastructure, utility lines, water or wastewater piping .Varying levels of damage could be done to public service structures as well, causing delays in response from fire and police protection and delays in commuting to the nearest hospital to seek medical attention.

4.18.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on utilities and public services. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	Less than significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training
Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A

Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service

Construction of the CHP Academy APA could necessitate the relocation of utility infrastructure, which could result in temporary loss of service. As described above in the Environmental Setting section, existing infrastructure within the CHP Academy APA project site includes telephone lines, electric lines, fiber optic lines, and a culvert.

Utility infrastructure could require significant actions to repair, relocate, or replace. Additionally, CHP Academy APA construction could necessitate that existing utilities be taken off line or could cause accidental damage to identified and unidentified infrastructure. Because the potential exists for damage and service interruptions to existing utilities, this potential construction effect is considered significant. Mitigation Measure PUB-MM-1 would reduce this potential effect to a less-than-significant level.

Mitigation

Mitigation Measure PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training

WSAFCA will ensure the following measures are implemented to avoid and minimize potential damage to utility and service disruptions during construction. Implementing these measures will help ensure existing utilities are not damaged and that service interruptions are minimized.

- Obtain utility excavation or encroachment permits as necessary before initiating any work with the potential to affect utility lines, and include all necessary permit terms in construction contract specifications.
- Before starting construction, coordinate with utility providers in the area to locate existing lines. Avoid the relocation of utilities when possible. Provide notification of potential interruptions in services to the appropriate agencies.
- Before starting construction, verify utility locations through field surveys and Underground Service Alerts. Clearly mark any buried utility lines in the area of construction before any earthmoving activity.
- Before starting construction, prepare a response plan to address potential accidental damage to a utility line. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities to ensure the safety of the public and the workers. Contractors will conduct worker training to respond to these situations.
- Stage utility relocations to minimize service interruptions.

Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction

Implementation of the CHP Academy APA may generate up to 89,000 cubic yards of levee material that would require disposal. A portion of the material could be disposed of on-site and used for new levee construction, as long as it is suitable material. Disposal of the soil material would occur if soil characteristics make it infeasible for reuse as levee material, or the soil is determined to have contaminants that would require appropriate disposal. Embankment fill material excavated to construct levee improvements would be evaluated for reuse after excavation and prior to disposal. Soil requiring disposal as part of the CHP Academy APA would likely be transported to the Yolo County Central Landfill; however, the location of the landfill used for disposal of spoil material and other construction-related waste may be determined by the construction contractor at the time of construction activity based on capacity, type of waste, and other factors. Only those landfills determined to have the ability to accommodate the construction disposal needs of the CHP Academy APA would be used.

As of fall 2009, the remaining capacity for the Yolo County Central Landfill is 37,108,000 cubic yards. Some of the disposed soils may be deemed suitable by the Yolo County Central Landfill for other beneficial uses. These soils would only be temporarily stored at the landfill and would not have an effect on its overcall capacity. The current landfill closure projection is in 2070, which takes into account disposal growth rate, including both beneficial and non-beneficial soil materials. Assuming all of the estimated 89,000 cubic yards of soil would require permanent disposal, CHP Academy APA implementation would represent less than 1% of the remaining capacity of the Yolo County Central Landfill. However, the option of beneficial re-use is likely to reduce the cubic yards of

soil that require permanent disposal. These facts combined with the fact that the landfill has sufficient capacity remaining throughout the projected life of the WSLIP (15 to 20 years), would make this effect less than significant. No mitigation is required. (Borrego pers. comm.).

4.18.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on utilities and public services. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	Less than significant	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training
Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A
Effect PUB-3: Expansion of Stormwater Drainage Facilities	Less than significant	N/A	N/A

Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service

This effect is the same as described above under the CHP Academy APA. The CHP Academy Alternative B could result in damage or service interruptions to existing utilities. This potential construction effect is considered significant. Mitigation Measure PUB-MM-1 would reduce this potential effect to a less- than-significant level.

Mitigation

Mitigation Measure PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training

Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction

Implementation of the CHP Academy Alternative B may generate up to 11,000 cubic yards of levee material that would require disposal. A portion of the material could be disposed of on-site and used for new levee construction, as long as it is suitable material. Disposal of the soil material would occur if soil characteristics make it infeasible for reuse as levee material, or the soil is determined to have contaminants that would require appropriate disposal. Embankment fill material excavated to construct levee improvements would be evaluated for reuse after excavation and prior to disposal. Soil requiring disposal as part of the CHP Academy Alternative B would likely be transported to the Yolo County Central Landfill; however, the location of the landfill used for disposal of spoil material and other construction-related waste may be determined by the construction contractor at the time of construction activity based on capacity, type of waste, and other factors. Only those landfills determined to have the ability to accommodate the construction disposal needs of the CHP Academy Alternative B would be used.

As of fall 2009, the remaining capacity for the Yolo County Central Landfill is 37,108,000 cubic yards. Some of the disposed soils may be deemed suitable by the Yolo County Central Landfill for other beneficial uses. These soils would only be temporarily stored at the landfill and would not have an effect on its overcall capacity. The current landfill closure projection is in 2070, which takes into account disposal growth rate, including both beneficial and non-beneficial soil materials. Assuming all of the estimated 11,000 cubic yards of soil would require permanent disposal, CHP Academy Alternative B implementation would represent less than 1% of the remaining capacity of the Yolo County Central Landfill. However, the option of beneficial re-use is likely to reduce the cubic yards of soil that require permanent disposal. These facts combined with the fact that the landfill has sufficient capacity remaining throughout the projected life of the WSLIP (15 to 20 years), would make this effect less than significant. No mitigation is required. (Borrego pers. comm.).

Effect PUB-3: Expansion of Stormwater Drainage Facilities

The operation of the proposed relief wells would result in new flows to the existing stormwater drainage facilities. In the case of CHP Academy Alternative B, there is sufficient capacity in the existing adjacent drainage ditch and pump station to pump the relief well discharge back into the Sacramento Bypass (see Section 4.3 CHP Academy Alternative B Project Description). Implementation of the CHP Academy Alternative B would therefore not require the construction of new drainage facilities. This effect is less than significant. No mitigation is required.

Section 4.19
Public Health and Environmental Hazards—CHP Academy Early Implementation Project

4.19.1 Affected Environment

This section describes the affected environment for public health and environmental hazards in the CHP Academy EIP project area, including regulatory and environmental setting.

4.19.1.1 Regulatory Setting

This section discusses the regulatory setting related to public health and environmental hazards in the CHP Academy EIP project area.

4.19.1.1.1 Federal

The following Federal policies related to public health and environmental hazards may apply to implementation of the CHP Academy EIP. Please see Section 3.17.2.1 Regulatory Setting for a more complete description of each policy.

- Resource Conservation and Recovery Act
- Comprehensive Environmental Response, Compensation, and Liability Act

4.19.1.1.2 State

The following state policies related to public health and environmental hazards may apply to implementation of the CHP Academy EIP. Please see Section 3.17.2.1 Regulatory Setting for a more complete description of each policy.

- Hazardous Materials Release Response Plans and Inventory Act of 1985
- Hazardous Waste Control Act
- Emergency Services Act

4.19.1.1.3 Local

The following local policies related to public health and environmental hazards may apply to implementation of the CHP Academy EIP. Please see Section 3.17.2.1 Regulatory Setting for a more complete description of each policy.

- *Draft 2030 Countywide General Plan* for Yolo County, Health and Safety Element
- *City of West Sacramento General Plan*

4.19.1.2 Environmental Setting

This section discusses the environmental setting related to public health and environmental hazards in the CHP Academy EIP project area.

4.19.1.2.1 Hazardous Materials

Hazardous materials are chemicals and other substances defined as hazardous by federal and state laws and regulations. In general, these materials are substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may have harmful effects on public health or the environment during their use or when released to the environment. Hazardous materials also include waste chemicals and spilled materials. There are no known occurrences of hazardous materials at the CHP Academy EIP project area.

4.19.1.2.2 Wildland Fires

The area surrounding the CHP Academy EIP project site is not considered a fire-prone area.

4.19.1.2.3 Emergency Response and Evacuation

Emergency response and evacuation services for the project area are provided by the various departments in the City of West Sacramento and through Yolo County Sheriff, Fire, and Emergency Services Departments. The City of West Sacramento and RD 537 have entered a joint flood operation agreement. The agreement has established procedures to protect the health, safety, welfare and property of the residents and landowners in the program area. Procedures described in the agreement document consist of flood preparedness, information management, monitoring, flood fighting, and flood evacuation.

4.19.1.2.4 Schools

There are no schools located within 0.25 mile of the CHP Academy project area. This is relevant because the State CEQA Guidelines advise that hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school could constitute a significant environmental effect.

4.19.2 Environmental Consequences

This section describes the environmental consequences relating to public health and environmental hazards for the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.17.3.3, Effects and Mitigation Measures.

4.19.2.1 Assessment Methods

The evaluation of potential effects on public health and environmental hazards addresses the potential for health and safety hazards during construction of the CHP Academy EIP levee alternatives. The analysis includes evaluation of (1) the potential effects related to construction activities on workers, and (2) general safety of and hazards to both workers and the public posed by the construction and implementation of the levee alternatives.

4.19.2.2 Determination of Effects

Criteria used for determining the significance of an effect on public health and environmental hazards are based on the environmental checklist included in Appendix G (14 CCR 15000 *et seq*.) of the State CEQA Guidelines as well as professional standards and practices. The proposed project was considered to cause a significant effect if it would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;
- emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- be located on a site that is on a list of hazardous materials sites compiled pursuant to California Government Code 65962.5, and as a result would create a significant hazard to the public or the environment;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- significantly affect drinking water quality.

4.19.3 Effects and Mitigation Measures

4.19.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Public Health and Hazards program analysis (Section 3.17.3.3.1). In summary, those effects could include creation of hazardous conditions for the public and environment through the spread of hazardous materials, structural damage to homes and other buildings, damage to electrical and gas delivery systems, and contamination of the water supply. Receding floodwaters could also leave behind dangerous strains of mold and serve as breeding grounds for mosquitoes and other disease vectors. A major flood event could also disrupt or place severe strain on critical public services such as fire protection, police protection, and emergency medical assistance.

4.19.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on public health and environmental hazards. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	Less than significant	WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A

Effect PH-1: Incidental Release of Hazardous Materials during Construction

CHP Academy APA implementation would require the use of hazardous materials such as fuels and lubricants to operate construction equipment and vehicles such as excavators, compactors, haul trucks, and loaders. Bentonite (a non-hazardous material) would be transported to sites where slurry cutoff wall construction would occur. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction. However, fuels, and lubricants could be accidentally released into the environment at the construction site and along haul routes, causing environmental or human exposure to these hazards. Risks to water quality (surface, ground, and drinking water) associated with incidental release of these materials are addressed in Section 4.5, Water Quality and Groundwater Resources.

As discussed in Section 4.5, the implementation of environmental commitments, including a SWPPP, a bentonite slurry spill contingency plan (BSSCP), an SPCCP, and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2, would ensure that the risk of accidental spills and releases into the environment would be minimal and that the effect on water quality would be less than significant.

In addition, WSAFCA would be required to comply with applicable Federal, state, and local laws, which would reduce the potential for accidental release of hazardous materials during their transport and use. Consequently, the risk of incidental release of hazardous materials during their transport and use in CHP Academy APA construction activities is low and the effect is considered less than significant.

Effect PH-2: Exposure to Hazardous Materials Encountered at Project Site

There is the potential that known or previously undocumented hazardous materials could be encountered at the CHP Academy APA project site. Excavation and construction activities at or near areas of currently unrecorded soil or groundwater contamination could result in the exposure of construction workers, the general public, and the environment to hazardous materials such as petroleum hydrocarbons, pesticides, herbicides, fertilizers, contaminated debris, or elevated levels of other chemicals that could be hazardous. At this time, there are no known occurrences of hazardous materials at the CHP Academy APA project area. However, construction activities in the vicinity of potentially unknown recognized environmental concerns could result in public health hazards.

Implementation of Mitigation Measures PH-MM-1, WQ-MM-1, and WQ-MM-2 described in Section 4.5, Water Quality and Groundwater Resources, and the implementation of environmental commitments of a SWPPP, a BSSCP, and SPCCP, as described in Section 2.9 of Chapter 2, Alternatives, would ensure that the effect on public health and the environment would be less than significant.

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures

WSAFCA will conduct Phase I ESAs and, if necessary, Phase II ESAs or other appropriate testing. If necessary, the assessment will include an analysis of soil or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations before construction activities begin.

Recommendations in Phase I and Phase II ESAs to address any contamination that is found will be implemented before initiating ground-disturbing activities. In addition, WSAFCA will implement the following measures before ground-disturbing or demolition activities begin, in order to reduce health hazards associated with potential exposure to hazardous substances:

- Prepare a site plan that identifies any necessary remediation activities appropriate for proposed land uses, including excavation and removal of contaminated soils, and redistribution of clean fill material on the project site. The plan will include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site, as well as any other hazardous materials. In the event that contaminated groundwater is encountered during site excavation activities, the contractor will report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The contractor will be required to comply with the plan and applicable Federal, state, and local laws.
- Retain licensed contractors to remove all underground storage tanks.
- Notify the appropriate Federal, state, and local agencies if evidence of previously undiscovered soil or groundwater contamination is encountered during construction activities. Any

contaminated areas will be cleaned up in accordance with the recommendations of Yolo County Environmental Health Division, Central Valley RWQCB, California Department of Toxic Substances Control, or other appropriate Federal, state or local regulatory agencies.,

- Prepare a worker health and safety plan before the start of construction activities that indentifies, at a minimum, all contaminants that could be encountered during construction activity; all appropriate worker, public health, and environmental protection equipment and procedures to be used during project activities; emergency response procedures; the most direct route to the nearest hospitals; and a Site Safety Officer. The plan will describe actions to be taken should hazardous materials be encountered on site, including protocols for handling hazardous materials and preventing their spread, and emergency procedures to be taken in the event of a spill.

Effect PH-3: Safety Hazards from the Construction Site and Vehicles

Under the CHP Academy APA, construction workers would operate vehicles and other mechanical equipment that, if used improperly, could result in safety hazards at the construction site. WSAFCA would ensure that all workers are properly trained to operate equipment. Safety precautions would be followed at all times during construction to avoid accidents. WSAFCA also would require that all workers have a valid driver's license and insurance. These measures would ensure that this effect would be less than significant.

In addition, people may walk, ride bicycles, or otherwise use the levee during the construction period. The staging of the equipment when construction is not underway (i.e., weekends, holidays, or overnight, if construction is not performed 24 hours per day) may pose a threat to public safety if the equipment is not properly secured. Proper signage and detours would be provided as stated in the environmental commitment to provide notification of construction area closure (described in Section 2.9, Chapter 2, Alternatives). These measures would reduce the risk to the public when construction is underway and when it is not. Therefore, this effect would be less than significant. No mitigation is required.

Effect PH-4: Protection of People or Structures from Flood Hazards

All levees have the potential to fail, regardless of design. USACE has set forth guidelines for levee design. Under the CHP Academy APA, the Sacramento Bypass Levee would be improved using methods that meet engineering requirements set forth by both USACE and the Reclamation Board. In addition, this levee would be improved to meet FEMA 200-year flood protection certification. This would be an improvement compared to the existing level of flood protection. Therefore, this effect would be beneficial.

4.19.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on public health and environmental hazards. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	Less than significant	WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures
PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A

Effect PH-1: Incidental Release of Hazardous Materials during Construction

CHP Academy Alternative B implementation would require the use of hazardous materials such as fuels and lubricants to operate construction equipment and vehicles such as excavators, compactors, haul trucks, and loaders. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction. However, fuels, and lubricants could be accidentally released into the environment at the construction site and along haul routes, causing environmental or human exposure to these hazards. Risks to water quality (surface, ground, and drinking water) associated with incidental release of these materials are addressed in Section 4.5, Water Quality and Groundwater Resources.

As discussed in Section 4.5, the implementation of environmental commitments, including a SWPPP, an SPCCP, and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2, would ensure that the risk of accidental spills and releases into the environment would be minimal and that the effect on water quality would be less than significant.

In addition, WSAFCA would be required to comply with applicable Federal, state, and local laws, which would reduce the potential for accidental release of hazardous materials during their transport and use. Consequently, the risk of incidental release of hazardous materials during their transport and use in CHP Academy Alternative B construction activities is low and the effect is considered less than significant.

Effect PH-2: Exposure to Hazardous Materials Encountered at Project Site

This effect is the same as described above under the CHP Academy APA. There is the potential that known or previously undocumented hazardous materials could be encountered at the CHP Academy Alternative B project site that could result in the exposure of construction workers, the general

public, and the environment to hazardous materials. Implementation of Mitigation Measures PH-MM-1, WQ-MM-1, and WQ-MM-2 described in Section 4.5, Water Quality and Groundwater Resources, and the implementation of environmental commitments of a SWPPP and SPCCP, as described in Section 2.9 of Chapter 2, Alternatives, would ensure that the effect on public health and the environment would be less than significant.

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures

Effect PH-3: Safety Hazards from the Construction Site and Vehicles

This effect is the same as described above under the CHP Academy APA. Under implementation of the CHP Academy Alternative B, construction workers would operate vehicles and other mechanical equipment that, if used improperly, could result in safety hazards at the construction site. WSAFCA would ensure that safety precautions would be followed at all times during construction to avoid accidents. This effect would be less than significant. No mitigation is required.

Effect PH-4: Protection of People or Structures from Flood Hazards

This effect is the same as described above under the CHP Academy APA. Under the CHP Academy Alternative B, the Sacramento Bypass Levee would be improved using methods that meet engineering requirements set forth by both USACE and the Reclamation Board. In addition, this levee would be improved to meet FEMA 200-year flood protection certification. This would be an improvement compared to the existing level of flood protection. Therefore, this effect would be beneficial.

Section 4.20
Cultural Resources—CHP Academy Early Implementation Project

4.20.1 Affected Environment

This section describes the affected environment for cultural resources in the CHP Academy EIP project area, including the regulatory and environmental setting.

4.20.1.1 Regulatory Setting

4.20.1.1.1 Federal

The following Federal policies related to cultural resources may apply to the implementation of the CHP Academy EIP. Please see the program information in Section 3.18.2.1, Regulatory Setting, for a more complete description of each policy.

- Section 106 of the National Historic Preservation Act
- Federal Historic Significance Criteria

4.20.1.1.2 State

The following state policy related to cultural resources may apply to the implementation of the CHP Academy EIP. Please see Section 3.18.2.1, Regulatory Setting, for a more complete description of each policy.

- State Historic Significance Criteria (14 CCR 15064.5(a)(3)(A-D))

4.20.1.1.3 Local

The following local policies related to cultural resources may apply to the implementation of the CHP Academy EIP. Please see Section 3.18.2.1, Regulatory Setting, for a more complete description of each policy.

- *Yolo County General Plan*
- *City of West Sacramento General Plan*

4.20.1.2 Environmental Setting

This section discusses the environmental setting related to cultural resources in the project study area for the CHP Academy EIP including the records searches and field survey methods used to evaluate cultural resource conditions, and a summary of known cultural resources.

4.20.1.2.1 Records Search

In October 2007, ICF Jones & Stokes staff requested a search of database files from both the Northwest Information Center and the North Central Information Center of the California Historical Resources Information System located at California State University, Sacramento and Sonoma State respectively (see 3.18.3.1, Methods).

The records search resulted in the findings that all of the CHP Academy EIP project area has been surveyed for the presence of cultural resources (Bouey with Herbert 1990; Glover and Bouey 1990; Huberland and Westwood 2001; U.S. Army Corps of Engineers 2006; Wilson 1978). However, only portions of the CHP Academy EIP project area have been surveyed within the last 10 years, necessitating a new survey in support of the proposed project (see Field Survey below).

The records search also resulted in the finding that two known cultural resources are located within the CHP Academy project area: YOL-HRI-8/242 (Sacramento Weir and Sacramento Bypass) and the Sacramento River Levee. No previously recorded resources are located within 0.25 mile of the project area.

4.20.1.2.2 Shipwrecks Database

ICF Jones & Stokes consulted the California State Lands Commission's Shipwrecks Database (2009) to determine whether historic shipwrecks may be present in the CHP Academy EIP project area. The database was searched by selecting Yolo County in the search field, which generated a list of 12 shipwrecks in Yolo County. The database search yielded latitude and longitude coordinates for 11 of the shipwrecks, which were plotted using an online mapping program (http://www.itouchmap.com/latlong.html) to determine whether any of the shipwrecks were in the project area.

The wreck of the side-wheel steamer *Alviso*, burned at Brytes Bend on December 15, 1920, may be present in the project vicinity (California State Lands Commission 1988: 109).

4.20.1.2.3 Field Survey

In October 2007, an ICF Jones & Stokes archaeologist conducted a reconnaissance-level survey of the proposed project area. Although the records search indicated that the project area had been previously surveyed, an additional reconnaissance review of the project area was deemed necessary to confirm the previous findings and to confirm coverage of the entire project area. The project area is located within heavily a developed area of West Sacramento and very little, if any, natural ground surface remains. The project area has been graded, landscaped, and developed. No previously unidentified archaeological resources were noted within the project area as a result of the reconnaissance-level survey.

On February 5 and March 10, 2008, an ICF Jones & Stokes architectural historian conducted a field survey of the project area. As part of the field process, buildings, structures, and linear features 45 years old[1] or older were inspected, photographed, and documented (see Summary of Known Cultural Resources below).

[1] Although the NRHP typically only considers properties that are 50 years or older for listing, the Office of Historic Preservation (1995:2) employs a 45-year threshold for the recordation of cultural resources because "there is commonly a five year lag between resource identification and the date that planning decisions are made."

4.20.1.2.4 Native American Consultation

In January 2008, ICF Jones & Stokes cultural resources staff contacted the Native American Heritage Commission (NAHC) to request a search of their Sacred Lands File. The NAHC staff responded in January 2008 with a list of Native American contacts for both Yolo and Solano Counties and the results of the sacred lands data base research that was negative for findings in the CHP Academy EIP project area.

The NAHC contact list included the following federally recognized Native American tribes:

- Rumsey Indian Rancheria of Wintun Indians
- Cortina Band of Wintun Indians (including the Wintun Environmental Protection Agency)
- Ione Band of Miwok Indians

The NAHC also provided contact information for the following federally non-recognized Native American group and individual:

- Kesner Flores
- Wilton Miwok Rancheria

ICF Jones & Stokes staff sent letters to the Native American contacts on the lists provided by NAHC. The correspondence included a map depicting the program corridor, a brief description of the proposed program, and a request for the contacts to share any knowledge or concerns they may have regarding cultural resources in or adjacent to the study area. ICF Jones & Stokes received a letter response dated April 2008 from Mr. Marshall McKay, Tribal Chairman for the Rumsey Band of Wintun Indians. Mr. McKay's letter stated his gratitude for the letter notification about the proposed levee alternatives and that he was not aware of any sites of religious or cultural importance in the program corridor. Mr. McKay also stated that the Rumsey Indian Rancheria of Wintun would like to be notified of any cultural finds unearthed during construction actions. ICF Jones & Stokes staff placed follow-up telephone calls to the letter recipients on June 5, 2009. Voice messages were left with the contacts. To date, no return phone calls have been received.

4.20.1.2.5 Additional Research and Consultation

In an effort to identify important historic people, events, and trends that may have been associated with the project area, an ICF Jones & Stokes historian conducted archival research at the California State Library and the California State Archives, Sacramento. ICF Jones & Stokes also sent project notification letters to the Yolo County Historical Museum, the Yolo County Historical Society, the Sacramento Archives and Museum Collection Center, and the Portuguese Historical and Cultural Society requesting information regarding cultural resources that may be located within the project area. No responses have been received to date.

4.20.1.2.6 Summary of Known Cultural Resources

Three cultural resources 45 years old or older were identified in or immediately adjacent to the CHP Academy site. These consist of HRI-8/242 (Sacramento Weir and Sacramento Bypass), the Sacramento River Levee, and a segment of the Sacramento Northern Railroad. HRI-8/242 is eligible for NRHP and CRHR listing (Les 1986). The two remaining resources (the levee and railroad segment) were evaluated for the NRHP and CRHR as part of this project. The results of the survey

and evaluation of the architectural resources are documented in the technical report prepared for this project and are summarized below.

HRI-8/242 (the Sacramento Weir and Sacramento Bypass)

The Sacramento Weir and Sacramento Bypass were constructed between 1916 and 1918 as part of the Sacramento Flood Control Project. The weir is located immediately adjacent to the proposed project on the west bank of the Sacramento River. The Sacramento Bypass is a diversion channel that extends nearly 2 miles west from the weir and Sacramento River. Earthen levees are located on either side of the bypass. The weir and bypass have been determined to be eligible under NRHP Criterion A and CRHR Criterion 1 for their role in Sacramento Valley flood control efforts (Jones & Stokes 2007: 5; Les 1986: 2; Office of Historic Preservation 2007: 14).

Sacramento River Levee

A segment of the Sacramento River Levee is located in the CHP Academy EIP project area. The Sacramento River Levee is an earthen levee extending in a roughly north-south direction along the west bank of the Sacramento River. The Sacramento River Levee is part of a conglomeration of water control structures constructed in the Sacramento Valley between the mid-19th and mid-20th century as a response to heavy flooding in the area, which occurred repeatedly between the 1850s and early 1910s. Construction and improvements on the levee began as early as the 1860s and continued until the early to mid-20th century as increasing development in the area led to a greater need for more substantial and extensive levees. The Sacramento River Levee appears to meet NRHP Criterion A and CRHR Criterion 1 for its association with flood control and water reclamation efforts in California.

Sacramento Northern Railroad Segment

A former Sacramento Northern Railway alignment travels through the CHP Academy EIP project area in a roughly north-south direction and parallel to the Sacramento River West/North Levee segment of the Sacramento levee system. The Sacramento Northern Railroad alignment was originally constructed in 1911 as part of the Sacramento and Woodland Railroad and later the Northern Electric Railroad. In 1918, Sacramento Northern Railway assumed ownership, which resulted in the incorporation of all electric lines in the Sacramento Valley. Over time, portions of the rail alignment, including the subject segment, were abandoned. Due to a lack of integrity, the railroad segment does not appear to meet NRHP or CRHR criteria.

4.20.2 Environmental Consequences

This section describes the environmental consequences relating to cultural resources in the proposed CHP Academy EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of the CHP Academy EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.16.3.3, Effects and Mitigation Measures.

4.20.2.1 Assessment Methods

Evaluation of effects on cultural resources is based on information provided by literature review, records searches, historic map research, and consultation with Native Americans. This information was then compared to the type and location of proposed flood control and recreation improvements to determine whether effects would occur.

4.20.2.2 Determination of Effects

4.20.2.2.1 Federal Criteria

According to 36 CFR 800.5, an undertaking would have an adverse effect on historic properties if the effect alters the characteristics[2] that make a property eligible for inclusion in the NRHP. Such effects also would be considered adverse under NEPA. Adverse effects can occur when prehistoric or historic archaeological sites, structures, or objects listed in or eligible for listing in the NRHP are subjected to the following phenomena:

- physical destruction of or damage to all or part of the property;
- alteration of the property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines;
- removal of the property from its historic location;
- change in the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- neglect of the property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization; or
- transfer, lease, or sale of the property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

4.20.2.2.2 State Criteria

CEQA defines a significant impact on cultural resources in 14 CCR 15064.5(b) (1) and (2) as one with the potential to cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. Substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate

[2] Cultural resource managers often refer to these characteristics as character-defining elements or features. Character-defining features are those characteristics of a historic property, historical resource, or unique archaeological resource that convey its significance; the loss of character-defining elements impedes a property's ability to convey its historical significance. The importance of character-defining elements in cultural resource assessments is made clear in *National Register* Bulletin 15, which mentions "character" in this context 42 times (Andrus and Shrimpton 1997).

surroundings such that the significance of the resource would be materially impaired. The significance of a historical resource is materially impaired when a project results in demolition or material alteration in an adverse manner of those physical characteristics of a resource that:

- convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR;
- account for its inclusion in a local register of historical resources pursuant to PRC 5020.1(k) or its identification in a historical resources survey meeting the requirements of PRC 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

4.20.3 Effects and Mitigation Measures

4.20.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento Bypass Levee reach in the CHP Academy EIP project area. No levee improvements would be made to increase the level of protection. Under the No Action Alternative, it is presumed that no ground-disturbing activities associated with levee repair and alternatives would occur. Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento Bypass Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento Bypass Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city. If the Sacramento Bypass Levee were to fail, a cultural resource could be in the path of an inundation of debris and mud from that failure that could cause significant damage to or the complete destruction of the resource. Furthermore, emergency efforts to stop and repair a failed levee potentially would cause the same or more significant effects than those described for the proposed EIP. While the levee would be damaged, the extent of potential damage to the resource is unknown. It is also unknown whether these events would transpire and affect other cultural resources and therefore further analysis of effects on cultural would be speculative. Federal agencies responsible for levee repairs would be responsible for compliance with Section 106, as would local governments responsible for carrying out Federal programs.

4.20.3.2 CHP Academy Applicant Preferred Alternative

Implementation of the CHP Academy APA would result in the following effects on cultural resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than Significant	N/A	N/A
CR-2: Change in the Significance of an Archaeological Resource	Significant	Significant and unavoidable	CR-MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	Significant and Unavoidable	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes

The Sacramento Weir and Bypass are eligible for NRHP and CRHR listing and the Sacramento River Levee appears to meet NRHP and CRHR criteria. The Sacramento Weir and Sacramento Bypass are located adjacent to proposed construction. Therefore, WSAFCA is not expected to cause the physical destruction, relocation, or alteration of these resources. Overall, WSAFCA would also not demolish or substantially alter the physical characteristics of the Sacramento River Levee or cause a major change to its engineering design or overall setting. The Sacramento Weir and Bypass and the Sacramento River Levee would continue to convey their historical significance. Consequently, on the effect on these resources as a result of the proposed construction would be less than significant. No mitigation is necessary.

Effect CR-2: Change in the Significance of an Archaeological Resource

Although the project area has been surveyed and no archaeological resources were identified in the project area, there is the possibility that construction would unearth archaeological materials from beneath the ground surface. Damage to such resources, if they meet the significance criteria of the NRHP and/or the CRHR, would constitute a significant effect under CEQA (14 CCR 15064.5) and an adverse effect under Section 106 of the NHPA and NEPA. Therefore, the effect on archaeological resources would be significant. While implementation of Mitigation Measure CR-MM-1 (Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan) would reduce the intensity of the effect, the effect would still be significant and unavoidable.

Mitigation

Mitigation Measure CR-MM-1. Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan

In the event that archaeological resources are identified because of project-related ground disturbance, WSAFCA will implement the inadvertent discovery procedures of the WSLIP HPMP. The HPMP will direct the Corps and WSAFCA's cultural resources management activities in the WSLIP Program study area, including the CHP Academy EIP project area. The HPMP will describe the stop-work and consulting party communication protocols, a research design and methods for treatment of inadvertent archaeological discoveries, and reporting requirements. Implementation of the HPMP will ensure that any archaeological resources discovered during construction will be protected from additional damage or treated in such a manner that effects to the resources are

compensated through scientific excavation, analysis, reporting, and, as may be appropriate, public interpretation of the resources.

Effect CR-3: Disturbance of Native American and Historic-Period Human Remains

The project area is located in an area that is considered of moderate to high sensitivity for archaeological cultural remains, including burials. The potential for buried human remains to be unearthed and disturbed during ground-disturbing activities that would be associated with levee repair and alternative construction within the study area is considered high. The disturbance of any human remains is considered a significant effect. Implementation of the human remains discovery provisions in the program HPMP (Mitigation Measure CR-MM-2) would likely reduce the severity of this effect, but it would still be considered a significant and unavoidable effect.

Mitigation

Mitigation Measure CR-MM-2. Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

In the event that human remains are identified because of project-related ground disturbance, the WSAFCA will implement the human remains discovery procedures of the WSLIP Program HPMP. The HPMP will direct the Corps and WSAFCA's cultural resources management activities in the WSLIP Program study area, including the CHP Academy EIP project area. The HPMP will describe the stop-work and consulting party communication protocols, procedures for consulting with descendant communities, a research design, and methods for treatment of human remains discoveries, and reporting requirements. Implementation of the HPMP will ensure that any human remains discovered during construction will be protected from additional damage or treated in such a manner that effects to the resources are compensated through scientific excavation, analysis, reporting, and, as may be appropriate, public interpretation of the resources.

4.20.3.3 CHP Academy Alternative B

Implementation of the CHP Academy Alternative B would result in the following effects on cultural resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than Significant	N/A	N/A
CR-2: Change in the Significance of an Archaeological Resource	Significant	Significant and unavoidable	CR-MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan
CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	Significant and Unavoidable	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes

This effect is the same as described above under the CHP Academy Applicant Preferred Alternative. Construction of the CHP Academy Alternative B is not expected to result in the physical destruction, relocation, or alteration of significant architectural resources. No mitigation is necessary.

Effect CR-2: Change in the Significance of an Archaeological Resource

This effect is the same as described above under the CHP Academy Applicant Preferred Alternative. There is a possibility that construction of the CHP Academy Alternative B would unearth archaeological materials from beneath the ground surface. Implementation of Mitigation Measure CR-MM-1 would reduce the intensity of this effect, but the effect would still be significant and unavoidable.

Mitigation

Mitigation Measure CR-MM-1. Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Effect CR-3: Disturbance of Native American and Historic-Period Human Remains

This effect is the same as described above under the CHP Academy Applicant Preferred Alternative. The disturbance of any human remains would be considered a significant effect. Implementation of Mitigation Measure CR-MM-2 would likely reduce the severity of this effect, but it would still be considered a significant and unavoidable effect.

Mitigation

Mitigation Measure CR-MM-2. Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Chapter 5
The Rivers Early Implementation Project

5.1 Introduction

This chapter provides the project-level analysis for The Rivers EIP. The analysis of effects for The Rivers EIP tiers directly from the program analysis. To avoid repetition and for communication efficiency, background information that is general for the study area or common for all reaches or alternatives is summarized in this chapter and the reader is referred to Chapter 3 for further discussion. Site-specific setting and environmental consequence information is provided here to more fully explain the effect and the mitigation measures that would be implemented to reduce that effect. As stated in Chapter 3 for the WSLIP program-level analysis, the baseline environmental conditions used in this EIP analysis consist of the existing physical environment as of January 28, 2009, when WSAFCA published the Notice of Preparation (NOP) to prepare an EIR with the State Clearinghouse. USACE published a Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on January 27, 2009.

Note: For readability, the pages in this chapter for the project-level analysis are numbered consecutively. The resource topics follow the same sequence as the Chapter 3 program analysis but the heading numbers vary based on the need for up-front text specific to the project-level analysis.

5.2 Purpose and Need

The purpose of implementing treatments at The Rivers site is to achieve a minimum of 200-year flood protection at the site (0.5% AEP), which would ultimately help reduce flood risk for the entire city of West Sacramento.

The approach to meet this purpose, as with the programmatic approach, is to provide an evaluation of The Rivers EIP site, develop alternatives for improvement, and provide a basis for partnerships with Federal and state agencies to implement improvements that meet the flood protection and compatible recreation and open space goals. The objectives under this purpose and approach are to:

- construct levee improvements as soon as possible to reduce flood risk as quickly as possible;
- construct improvements that are politically, socially, economically, and environmentally acceptable;
- provide recreation and open space elements for the city that are compatible with flood improvement actions; and
- ensure continuing Federal assistance for levee repairs and maintenance.

The general purpose of and need for action at The Rivers site are the same as described for the overall WSLIP in Chapter 1 (Section 1.4). Specific levee deficiencies at this site are geometry, stability, through-seepage, and under-seepage. Flood and recreation improvements implemented under The Rivers EIP would assist in incrementally achieving the purpose of and need for the WSLIP and would reduce local flood risk in the proximity of the project.

5.3 Alternatives

5.3.1 The Rivers Project Alternatives

5.3.1.1 Introduction

The Rivers EIP area is approximately 4,500 feet long and is located on the Sacramento River North Levee, just north of the confluence of the Sacramento and American Rivers, including part of The Rivers residential development (Figure 5-1). As stated above, levee deficiencies at this site include geometry, stability, through-seepage, and under-seepage.

Bryte Park/Riverbank Elementary School and The Rivers residential development are located south of The Rivers EIP. The DWR maintenance yard is located directly west of the site. A leaking underground storage tank for gasoline and diesel was discovered and removed from the DWR maintenance yard in 1994. Monitoring and sampling of groundwater and soil at and in the vicinity of the site of contamination began in September 2001 with the intent to explore the extent of the fuels-impacted groundwater and provide data on risk to sensitive receptors. A small portion of the plume is located within the footprint of western end of the project site (see Section 3.3, Water Quality and Groundwater Resources). DWR has created a work plan with the Regional Water Quality Control Board (RWQCB) to continue to monitor the site, which includes the installation of additional monitoring wells in 2009 and 2010. During flood improvement construction, WSAFCA would coordinate with DWR and RWQCB to ensure that construction does not conflict with the current remediation efforts.

5.3.1.2 The Rivers Alternatives Screening

WSAFCA considered a range of program alternatives that would address the deficiencies at The Rivers site. The improvement alternatives were narrowed as listed below.

- Alternative 1: slope flattening, slurry cutoff wall
- Alternative 2: slope flattening, seepage/stability berm
- Alternative 3: slope flattening, sheet pile wall

As introduced earlier in Section 2.2.2.3, WSAFCA established and applied nine criteria to qualitatively evaluate the alternative improvements and eliminate those alternatives that did not adequately meet the criteria. The criteria are re-listed below and detailed in Section 4.3.1.2, CHP Academy Alternatives Screening (the project objective is site-specific while the other criteria are the same).

- Meet the Project Objectives to Reduce Risk—The objective of the project is to alleviate through- and under-seepage concerns on this portion of the levee, as well as stability and geometry issues. Alternatives that provide the greatest reduction in subsurface water pressure (measured as the exit gradient of water moving through the soil) and improve slope stability and geometry relative to current levee standards are the most favored. Evidence of seepage (possible boils) has been observed at this site during previous high-water events.
- Availability of Funds
- Scalability of Construction



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Flood Control Improvements

Station Interval	APA Levee Treatments	Alt B Levee Treatments
70+00 to 90+00	DSM cutoff wall and landside slope flattening	Deep sheet pile wall and landside slope flattening
90+00 to 116+00	Slurry cutoff wall and landside slope flattening	Sheet pile wall and landside slope flattening

N

0 150 300 600 Feet

Figure 5-1
The Rivers EIP Applicant Preferred Alternative and Alternative B

Note: This figure is the same as 2-24 and is provided here for your convenience.

- Real Estate Requirements
- Land Use Compatibility
- Permit Requirements
- Environmental Constraints (such as biological and cultural resources)
- Integration of Multiple Objectives
- Evolving Technical Policy

In some cases, an alternative may partially meet a criterion while another meets it more fully. For this reason, the designations of more favorable (MF) and less favorable (LF) were applied to each criterion for each alternative. Table 5-1 below provides the results of the criteria evaluation.

Table 5-1. Evaluation of The Rivers EIP Alternatives

Evaluation Criteria	Alternative 1 (slope flattening, slurry cutoff wall)	Alternative 2 (slope flattening, seepage/stability berm)	Alternative 3 (slope flattening, sheet pile wall)
Meet the Project Objective to Reduce Risk	MF	MF	MF
Availability of Funds	MF	LF	LF
Scalability of Construction Project	MF	LF	MF
Real Estate Requirements	MF	LF	MF
Land-Use/Project Compatibility	MF	LF	MF
Permit Requirements	MF	LF	MF
Environmental Constraints	MF	LF	LF
Integration of Multiple Objectives	MF	LF	MF
Evolving Technical Policy	MF	MF	MF

Alternatives 1 and 3 appear to be the most favorable levee improvement strategies based on this evaluation of various potential levee repair alternatives for The Rivers site. Repairing this site through the installation of either form of seepage cutoff barrier requires the smallest temporary and permanent footprint for implementation. This reduced footprint will likely result in reduced real estate acquisition. The preliminary cost opinions developed for Alternative 1 and Alternative 3 identified similar costs to implement either (approximately $15million to $25 million). However, two factors distinguish Alternative 1 as the preferred strategy. First, a comparison of preliminary cost opinions developed for these alternatives identified Alternatives 1 and 3 as the least expensive to implement. Alternative 2 would require additional costs associated with real estate acquisition. Second, the noise and/or vibration associated with the installation of sheet pile panels in Alternative 3 may not be compatible with the close proximity of residences along a portion of this site. As a result, Alternative 1 is the proposed levee improvement strategy for The Rivers site.

Alternative 2 appears to be the least favorable alternative. This alternative requires the installation of a seepage and/or stability berm. In most cases, berms require some amount of additional real estate to implement. The acquisition of additional real estate often results in increased project costs as well as additional various potential environmental impacts. At this site, the installation of a

seepage/stability berm would likely affect several residences, roads, and school facilities. Therefore, this alternative has not been carried forward for further consideration.

Based on the screening process, two of the alternatives were developed for The Rivers EIP to be carried forward for study in the EIS/EIR. Table 5-2 provides detail for the levee stationing and treatments proposed for each alternative. The alternatives (in addition to no action) are identified below.

- **The Rivers APA.** The installation of a slurry cutoff wall combined with landside slope flattening (Alternative 1, above).
- **The Rivers Alternative B.** The installation of a sheet pile wall **c**ombined with landside slope flattening (Alternative 3, above).

The proposed recreation program improvements are the same for both The Rivers APA and The Rivers Alternative B. Chapter 5 of this EIS/EIR includes an analysis of the effects of The Rivers APA, The Rivers Alternative B, and the No Action Alternative. A detailed description of both alternatives and the recreation improvements follows the alternatives screening discussion below.

Table 5-2. The Rivers EIP Flood Improvement Alternatives

EIP	Station Ranges		Deficiencies	APA Levee Treatments	Alt B Levee Treatments
The Rivers (70+00 to 115+00)	70+00	115+00	Through-seepage, under-seepage, stability, geometry	Slurry cutoff wall and landside slope flattening	Deep sheet pile wall and landside slope flattening

Source: Nordvik pers. comm.

5.3.1.3 No Action Alternative

Under the No Action Alternative, no flood or recreation improvements would be implemented at The Rivers site, West Sacramento would remain at flood risk, USACE levee vegetation guidance would be complied with, and current flood O&M activities would continue. A more complete discussion of no action as it applies to the WSLIP and this EIS/EIR is described in Section 2.4, with relevant detail provided below for the project-level analysis. Refer to Section 2.4 for discussion about the definition of no action, possibility of future Federal or state action, relationship of flood map modernization to no action, and USACE levee vegetation policy relative to no action.

5.3.1.3.1 Consequences of Levee Failure

Assuming that no levee repair or strengthening would occur under the No Action Alternative means that the Sacramento River North levee would remain or become more susceptible to failure as a result of identified deficiencies of seepage, geometry, and slope instability. As stated previously, evidence of seepage has been present at this site during high-water events, including possible boils. These conditions could cause portions of the levee to fail, triggering widespread flooding, extensive damage to the city's existing residential, commercial, agricultural, and industrial structures, and potential loss of life and property. Extensive damage to utilities, roadways, major interstate transportation corridors, and other infrastructure systems would also likely occur.

The magnitude of the flood damage would depend upon the nature of the levee failure, severity of the storm, and river flows at the time of a potential levee failure. A failure of this levee would first flood the residential communities of Broderick and Bryte, and then spread west to the CHP Academy site, overland flow would inundate the commercial core of West Sacramento, and ultimately could inundate the Southport area. The elevations are higher in the north sector of the city, meaning the land surface generally falls from the north and east toward the south and west. Therefore, a breach at this location could flood the entire city as the north basin would fill followed by the south basin.

Flood depth maps prepared for West Sacramento indicate that under a 100-year flood event scenario, inundation levels would range from 1 foot to 10 feet in the north basin, with most in the range of 1 to 5 feet, about 20% from 5 to 10 feet, and less than 10% less than 1 foot. Figure 2-1 shows the ultimate estimated inundation depths for a 100-year flood event.

In 2006, two hypothetical levee failures were analyzed for West Sacramento utilizing 100-year water surface elevations and hydrology. This analysis was performed to assist the City in its flood emergency preparedness planning. One failure was located in the northern part of the city, on the Sacramento River North Levee, and these results are directly representative of The Rivers site (failure locations are shown in Figures 2-2 and 2-3). (Wood Rodgers 2006.)

The analysis indicates that a levee failure on the Sacramento River North Levee during a 100-year event would flood the entire north area with at least 1foot of water within 24 hours, at which point vehicular evacuation would become severely limited (a depth of 1 foot is regarded as impassable from the standpoint of vehicular traffic). Certain neighborhoods close to the levee failure would lose access to evacuation routes within three hours of levee failure. Figure 2-2 shows the estimated time to 1-foot inundation depths throughout the northern area. Within3 days, floodwater depths would reach 3to 10 feet, depending on land surface elevation (as shown in Figure 2-1). Floodwaters would flow from north to south, seeking the lowest topographical elevation, and eventually discharge into the DWSC. The study estimates that floodwaters would begin to spill into the DWSC less than 24 hours after the breach. Modeling indicates that the DWSC could absorb up to 20,000 cubic feet per second (cfs) in discharge flow from waters flooding the north area of the city before overtopping and flooding the Southport area. (Wood Rodgers 2006.)

Levee failure and subsequent flooding of the city of West Sacramento would affect the entire city, jeopardizing lives, and would cause substantial damage to structures, contents, and other property such as landscaping and automobiles. As of 2005, a population of 40,439 was living in 15,448 housing units within the city (Sacramento Area Council of Governments 2008a and 2008b). All of these residents could be displaced by a catastrophic flood event. Additionally, the city is home to 30,655 jobs (Sacramento Area Council of Governments 2008c), 734 commercial and industrial structures, 46 public structures and 27 park facilities, which would all be affected by a flood event (HDR 2009). Environmental and agricultural resources could also sustain major damage in a flood event; 22.6% of the land area within the city is either farmland or open space (City of West Sacramento 2009). If a catastrophic flood event occurred resulting in inundation up to 15 feet, land damages are estimated to be $237,763,648 and structural damages could be up to $1,750,118,102 (PB 2007). These values are based on the 100-year event.

A flood event could cause severe public health hazards as well. Flooding in the city could upset and spread stored hazardous materials, creating hazardous conditions for the public and the environment. Flood damage to homes and other structures could render them dangerous, due to structural damage as well as contamination. Additionally, the floodwaters and ponds left behind

could provide a wide breeding ground for mosquitoes and other disease vectors. Effects to the water supply system could be particularly severe in a flood event, and could leave residents and businesses without a reliable water supply for a significant amount of time, as a single break in a water delivery pipe or main could contaminate the entire city's water supply. A major flood event could also result in substantial stress or disruption to the region's emergency response capacity, hospital services, and other critical lifelines of West Sacramento.

During the recovery period after a flood event, West Sacramento residents would require temporary housing, and displacement of many or all occupants would occur while levees, buildings, and other infrastructure were repaired. Businesses, social services, and other employers occupying affected structures would be forced to relocate. The potential number of displaced residents (over 40,000) and businesses (over 30,000 jobs) is so large that the demand for temporary quarters would likely exceed the available supply of vacant buildings surrounding the West Sacramento area. Thus, many displaced residents and businesses may be forced to relocate to areas a considerable distance from West Sacramento, resulting in substantial intermediate-term and long-term economic impacts on the West Sacramento area and its people. These impacts include changes in employment numbers and patterns, business and personal incomes, tax revenues, and regional economic activity.

A flood event in West Sacramento would also disrupt state and interstate highway, rail, and shipping traffic, causing long-term effects on the region's and the state's economy and ability to move people and goods. West Sacramento has one of the most comprehensive transportation networks on the west coast. Its central geographic location and extensive north-south and east-west highway access has made it a major distribution center. High volumes of truck and passenger traffic pass through the city on Interstate 80 and US-50/Business 80 every day, with truck traffic transporting approximately $63 billion worth of cargo annually through West Sacramento (HDR Engineering 2009). Major transcontinental rail lines passing through the city provide commercial and passenger rail service to all parts of the nation, and the Port of West Sacramento runs domestic and international shipping services (City of West Sacramento 2009). Approximately 9.3 million tons of rail freight valued at approximately $5 billion travels through West Sacramento annually (HDR Engineering 2009). Flooding of this transportation and distribution infrastructure would cut off major statewide and interstate transportation corridors.

Examples of critical facilities for government and commerce in West Sacramento that would be affected by a flood event are the CHP Academy, regional distribution centers for the U.S. Postal Service and United Parcel Service, Raley Field, offices for the California Department of General Services and California State Teachers' Retirement System, the Port of West Sacramento, wastewater treatment facilities, Interstate 80, US 50, and numerous other government and commercial buildings and infrastructure.

5.3.1.4 The Rivers Flood Improvement Alternatives

5.3.1.4.1 The Rivers Applicant Preferred Alternative—Slurry Cutoff Wall and Landside Slope Flattening

The Rivers APA would be a combination of slurry cutoff wall and landside slope flattening, which would address through-seepage, under-seepage, stability, and geometry deficiencies. The staging area would be located on the levee at the western end of the project site. There are 11 residences located on top of the levee and 4 residences adjacent to the landside toe of the levee encroaching on

the levee operation and maintenance area. The treatments and phases of construction are described in more detail below.

Treatment

Slurry Cutoff Wall

A 3-foot-wide slurry cutoff wall would be constructed from station 70+00 to station 115+00 up to a depth of 135 feet below degrade elevation using the DSM method of construction (Figure 5-1). The DSM method uses a crane-supported set of two to four mixing augers (typically 36 inches in diameter) set side by side. These augers are drilled through the levee crown and foundation to the required depth (capable of a maximum depth of about 200 feet). As the augers are inserted and withdrawn, a cement-bentonite grout is injected through the augers and mixed with the native soil. An overlapping series of mixed columns is drilled to create a continuous slurry cutoff wall panel.

To provide a working platform on the levee crown with adequate width, 69,000 cubic yards of embankment fill material would be excavated and hauled from the project site and disposed of at a permitted site within 20 miles of the project site. An excavator would manipulate injector return spoils near the DSM rig, and transport trucks would be used to haul spoils to an appropriate disposal area. A crane would be used for in-place sampling of DSM material and also for loading bentonite into the batch plant hopper. A mobile batch plant (diesel-powered) is required near each DSM rig at the work area to prepare the cement-bentonite grout. The grout is transported to the DSM rig through flexible hoses. The batch plant would require a pad of 50 by 100 feet within the staging area. Hauling at the work area would include scraper runs along the levee to the staging area and cement and bentonite deliveries to the batch plant.

During DSM slurry wall construction, one DSM rig typically can construct 20 linear feet of DSM wall per day (for wall depths up to 120 feet).

Slope Flattening

The existing landside slope of the levee is steep and requires flattening to meet appropriate slope stability and levee geometry requirements. The waterside slope would be trimmed and reshaped to a 2.5:1 slope the full length of the site (pending USACE approval based on engineering analysis to support a slope steeper than 3:1). The landside toe would remain at the same point.

Construction Details

Demolition and Vegetation Removal

The first phase of construction would consist of road demolition and clearing, grubbing, and stripping the levee surface. The roadway on the levee crown, Rivercrest Drive, would be dismantled before starting levee degradation. Asphalt debris from road demolition work would be hauled off site to an appropriate disposal location.

Demolition and vegetation removal would be performed for levee improvement construction and to comply with USACE vegetation guidance and CVFPB encroachment regulations requiring a vegetation-free zone. Clearing activities would consist of removing the larger vegetation such as trees and shrubs. Grubbing activities would consist of removing roots and stripping activities would consist of excavating approximately a foot of organic material from the levee surface. Approximately 75 to 100 trees on the landside and waterside of the levee would be removed to comply with USACE

levee vegetation guidance. In addition, there are a number of trees located just north of the disturbance boundary near stations 83+00 to 85+00. If these trees are determined to be within the vegetation-free zone as defined by the USACE levee vegetation guidance, they would be removed. It has been determined that the remaining waterside trees outside the disturbance footprint are not within the theoretical levee prism or vegetation-free zone and are in compliance with the USACE levee vegetation guidance.

Levee Degradation

Along the entire length of levee (4,500 feet) approximately one-third (6 feet) of the levee crown would be degraded to provide a 60- to 80-foot working platform. Approximately 58,000 cubic yards would be degraded and hauled from the project site and disposed of at a permitted site within 20 miles of the project site. Following completion of the slurry cutoff wall and slope flattening construction, approximately 92,000cubic yards of suitable levee embankment fill material would be transported from a permitted source 10 miles away from the project site to restore the levee crown to its original elevation.

Materials Reuse and Importation

Materials imported to the project site would include water, bentonite, cement, incidental construction support materials, aggregate base rock, asphalt, hydroseed, and about 92,000 cubic yards of embankment fill material. Embankment fill material excavated to construct levee improvements would be evaluated to determine its suitability for reuse. Any of the embankment fill material deemed suitable for reuse would be used to rebuild the levee. Embankment fill material of poor quality would be hauled to a permitted disposal site. Following completion of the slurry cutoff wall and slope flattening construction, approximately 92,000 cubic yards of suitable levee embankment fill material would be transported from a permitted source 10 miles away from the project site to restore the levee crown to its original elevation.

Temporary Facilities and Access Provisions

To facilitate project construction, earthen ramps would be improved to allow equipment access between the levee crown and staging area. Access would be limited to construction traffic only. Temporary construction easements may be required to lawfully secure access to the areas affected by construction. Riverbank Road, Fountain Road, and a small length of River Crest Road would be closed during construction, up to the duration of the project as noted below under Construction Schedule. Road lane closures would be addressed in Chapter 5, The Rivers Early Implementation Project.

Protection of Biological Resources

WSAFCA representatives met with representatives of USFWS and CDFG at The Rivers EIP site in December 2009 to discuss acceptable measures for the protection of special status species. During this coordination meeting, measures to protect VELB and Swainson's hawk were agreed upon and are included as part of the Rivers EIP. Those measures include protective K-rail fencing and orange construction fencing (Figure 5-2). See the Wildlife section (5.12) for descriptions of land cover types where these species may exist and the potential effects of this project on these species. Protective measures that will be implemented as part of the Rivers EIP for each of the species are as follows:



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Figure 5-2
The Rivers EIP
Protection Fencing Map

Valley Elderberry Longhorn Beetle

In the study area, elderberry shrubs occur in the Sacramento River riparian corridor adjacent to the project construction limit. Shrub survey results are shown in Wildlife, Section 5.12, Table 5.12-3, and Figure 5.12-1. A total of 22 shrubs or shrub clusters are located within 100 feet of the project construction limit.

The following measures will be implemented to avoid and minimize effects on VELB:

- Before ground disturbance, all construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the life history of VELB and the importance of its host shrub, the elderberry. Proof of this instruction will be submitted to the USFWS.
- Protective buffer areas will be created for elderberry shrub clusters by the installation of approximately 1500 feet of K-rail fencing along the edge of the construction zone (see Figure 5-2). In the eastern portion of the project area, there are shrubs that lie within existing tree canopy. To protect these shrubs and avoid potentially damaging existing trees, an approximate 80-foot semi-circle of orange construction fencing will be installed adjacent to the construction zone in this portion of the study area (See Figure 5-2). Within buffer areas, signs will be posted along fencing for the duration of construction. The signs will contain the following information:

  > This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.

- Buffer area fences around elderberry shrubs/clusters will be inspected weekly by a qualified biologist during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs throughout construction. Biological inspection reports will be provided to the project lead and USFWS.
- WSAFCA will ensure that the project site will be watered down as necessary to prevent dust from becoming airborne and accumulating on elderberry shrubs in and adjacent to a project site.

Swainson's Hawk

Swainson's hawks are known to nest in and adjacent to the study area, and project construction within this reach could affect Swainson's hawk, either directly or through habitat modification.

To avoid and minimize effects on Swainson's hawk, the following measures will be implemented:

- If a nest is found to occur within or adjacent to the study area on the western side of the Sacramento River, before ground disturbance, all construction personnel will participate in a CDFG-approved worker environmental awareness program. A qualified biologist will inform all construction personnel about the life history of Swainson's hawk and the importance of nest sites and foraging habitat.
- A breeding season survey for nesting birds will be conducted for all trees and shrubs that will be removed or disturbed which are located within 500 feet (0.5 mile for Swainson's hawk) of construction activities, including grading. Swainson's hawk surveys will be completed during at

least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30 with no fewer than three surveys completed in at least two survey periods, and with at least one of these surveys occurring immediately prior to project initiation (Swainson's Hawk Technical Advisory Committee 2000). Other migratory bird nest surveys can be conducted concurrent with Swainson's hawk surveys with at least one survey to be conducted no more than 48 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, can commence without any further mitigation.

- If active nests are found, WSAFCA will maintain a 0.25-mile buffer between construction activities and the active nest(s). In addition, a qualified biologist will be present on-site during construction activities to ensure the buffer distance is adequate and the birds are not showing any signs of stress. If signs of stress that may cause nest abandonment are noted, construction activities will cease until a qualified biologist determines that fledglings have left an active nest.

Utility Modifications

There are several utilities within the levee prism, including water, electricity, telephone, gas, and sanitary sewer lines; a storm drain; and two utility holes. According to CVFPB requirements, utilities are not allowed within the official levee prism (defined by a 20-foot width along the crown and 3:1 slope ratio landside and waterside). The top portion of a levee that falls outside the official levee prism is called freeboard. Utilities are allowed to be placed within the freeboard portion of a levee. Currently, utilities exist within the levee prism and must be relocated. All of the existing utilities within The Rivers project area (including those outside the levee prism) may be relocated and would be temporarily out of service during relocation activities.

Road Reconstruction

After levee improvements are completed, road reconstruction would occur at Rivercrest Drive. An aggregate base course would be installed and compacted. Lastly, asphalt would be added and compacted.

Construction Schedule

The goal of the project is to complete The Rivers improvements in 2011. The project is expected to be completed within 147 days. All flood improvement construction and staging would take place during the typical construction season (April 15 to November 1). Table 5-3 shows the phases of construction, equipment requirement, duration, and estimated time of year for construction activities.

Constraints, which may include contract award delays due to permitting, early season rain, the presence of nesting raptors, and equipment shortages, have the potential to suspend the construction of the project before the start of the flood season (November 1) in 2011. The Rivers APA construction contract would allow the contractor to construct on a 24-hours-per-day/7-days-per-week (24/7) work schedule to complete the construction of the improvements before the flood season in order to manage the risk of delay due to the constraints described above. The construction schedule described in the section below lists both the standard 10-hour-per-day/ 5-days-per-week work schedule and the 24/7 condensed work schedule. Either of these schedules may be used for the project.

Table 5-3. The Rivers APA: Construction Schedule Options

Phases of flood improvement construction	Required Equipment	Standard Duration (Days)	24/7 Duration (Days)
Mobilization	N/A	4	1.7
Roadway demolition	Bulldozers, dump trucks, a loader, and an excavator	2	0.8
Clearing and grubbing	A bulldozer, dump trucks, and an excavator	6	2.5
Levee degrade	A bulldozer, dump trucks, and an excavator	27	11.25
Slope flattening	A bulldozer, dump trucks, and an excavator	7	3
Slurry wall construction	A bulldozer, a long reach track hoe, a loader, a dump truck, and a rough terrain forklift	21	8.75
DSM wall construction	A delivery truck, a crane with augers, a loader, and a rough terrain forklift	44	18.3
Fill placement	Bulldozers, dump trucks, an excavator, a compactor, a maintainer, and a water truck	31	0.3
Roadway reconstruction	Dump trucks, a skip loader, a blade, a sheepsfoot compactor, a distributor, an asphalt paver, a pneumatic compactor, and a roller compactor	2	0.8
Demobilization	N/A	3	1.25
Total Days:		**147**	**61.35**

Source: Nordvik pers. comm.

Residents within the Immediate Vicinity of Construction

There are approximately 15 residences within the immediate vicinity of construction activities. During some periods of time, construction activities would be directly adjacent to their homes. In addition, the proposed utility modifications would result in the temporary disruption of service (water, communications, electricity, gas, and sanitary sewer) during construction. Disruptions in service would be up to four hours per episode for electrical, communications, and gas and up to eight hours per episode for water and sanitary sewer. Access by auto and by foot will be maintained, subject to detour and periodic closure (less than four hours). WSAFCA would provide assistance for residents to relocate during construction activities and provide compensation to residents for reasonable rent and living expenses incurred due to relocation. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Act, residents would be provided with decent, safe, and sanitary housing. In addition, WSAFCA would provide onsite security to ensure the protection of the resident's homes and contents during relocation.

Post-Construction Operation and Maintenance

After construction of slurry wall and slope flattening, the staging areas and levee slopes would be hydroseeded for erosion protection and to prevent colonization of exotic vegetation.

The only permanent facility would be the improved levee, subject to typical O&M as described under the CHP Academy APA above.

5.3.1.4.2 The Rivers Alternative B—Sheet Pile Wall and Landside Slope Flattening

The treatments proposed under Alternative B at The Rivers EIP consist of the installation of a deep sheet pile wall and landside slope flattening. A staging area of approximately 3.22 acres would be located in the northwestern corner of the project site. The treatments and phases of construction are described in more detail below.

Treatment

Sheet Pile Wall

A trench would be excavated along the sheet pile alignment to allow the pile to be driven to the proposed grade (below the existing levee grade). A driving template fabricated from structural steel would be placed to control the alignment as the sheet pile is installed. A hydraulic or pneumatically operated pile driving head attached to a crane would drive the sheet pile into the levee crown to the desired depth (up to 135 feet). An additional crane or excavator would be used to facilitate staging of the materials. The conditions of the site, driving pressure, hydrostatic loads, and corrosion considerations would determine the thickness and configuration of the sheet piles. If conditions indicate that corrosion is an issue the sheet piles can be coated, oversized to provide additional thickness as a corrosion allowance, and/or provided with a cathodic protection system.

Slope Flattening

The existing landside slope of the levee is steep and requires flattening to meet appropriate slope stability and levee geometry requirements. The waterside slope would be trimmed and reshaped to a 2.5:1 slope the full length of the site (pending USACE approval based on engineering analysis to support a slope steeper than 3:1). The landside toe would remain at the same point.

Construction Details

Demolition and Vegetation Pruning and Removal

The first phase of construction would consist of road demolition and clearing, grubbing, and stripping the levee surface. The roadway on the levee crown, Rivercrest Drive, would be dismantled before starting levee degradation. Asphalt debris from road demolition work would be hauled off site to an appropriate disposal location.

Demolition and vegetation removal would be performed for levee improvement construction and to comply with USACE vegetation guidance and CVFPB encroachment regulations requiring a vegetation-free zone. Clearing activities would consist of removing the larger vegetation like trees and shrubs. Grubbing activities would consist of removing roots and stripping activities would consist of excavating approximately a foot of organic material from the levee surface. Approximately 75 to 100 trees on the landside and waterside of the levee would be removed to comply with USACE levee vegetation guidance. There are a number of trees located just north of the disturbance boundary near stations 83+00 to 85+00. If these trees are determined to be within the vegetation free-zone as defined by the USACE levee vegetation guidance, they would be removed. It has been determined that the remaining waterside trees outside the disturbance footprint are not within the theoretical levee prism or vegetation-free zone and are therefore not proposed for removal. Approximately 11,000 cubic yards of material would be excavated and hauled off site to an appropriate disposal location during the clearing and grubbing phase of construction.

Materials Reuse and Importation

Materials imported to the project site would include water, cement, incidental construction support materials, aggregate base rock, asphalt, sheet pile walls, hydroseed, and about 55,000 cubic yards of new embankment fill material to replace poor quality levee material. Embankment fill material excavated to construct levee improvements would be evaluated to determine if it is suitable for reuse. Any of the embankment fill material deemed suitable for reuse would be used to rebuild the levee. Embankment fill material of poor quality would be hauled off site to a permitted disposal site.

Temporary Facilities and Access Provisions

To facilitate project construction, earthen ramps would be improved to allow equipment access between the levee crown and staging area. Temporary construction easements may be required to lawfully secure access to the areas affected by construction. Riverbank Road, Fountain Road, and a small length of River Crest Road would be closed during construction.

Utility Modifications

There are several utilities within the levee prism, including water, electricity, telephone, gas, and sanitary sewer lines; a storm drain; and two utility holes. According to CVFPB requirements, utilities are not allowed within the official level prism (defined by a 20-foot width along the crown and 3:1 slope ratio landside and waterside). The top portion of a levee that falls outside the official levee prism is called freeboard. Utilities are allowed to be placed within the freeboard portion of a levee. Currently, utilities are placed within the levee prism and must be relocated. All of the existing utilities within The Rivers project area may be relocated and would be temporarily out of service during relocation activities.

Road Reconstruction

After levee improvements are completed, road reconstruction would occur at Rivercrest Drive. An aggregate base course would be installed and compacted. Lastly, asphalt would be added and compacted within the new road alignment.

Construction Schedule

The goal of the project is to complete The Rivers EIP improvements in 2011. The project is expected to be completed within 57 days. All flood improvement construction and staging would take place during the typical construction season (April 15 to November 1). Table 5-4 shows specific durations and equipment required for each phase of construction.

Constraints, which may include contract award delays due to permitting, early season rain, the presence of nesting raptors, and equipment shortages, have the potential to suspend the construction of the project before the start of the flood season (November 1) in 2011. The Rivers Alternative B construction contract would allow the contractor to construct on a 24-hours-per-day/7-days-per-week (24/7) work schedule to complete the construction of the improvements before the flood season in order to manage the risk of delay due to the constraints described above. The construction schedule described in the section below lists both the standard 10-hour-per-day/ 5-days-per-week work schedule and the 24/7 condensed work schedule. Either of these schedules may be used for the project.

Table 5-4. The Rivers Alternative B: Construction Options

Phase of flood improvements construction	Required Equipment	Standard Duration (Days)	24/7 Duration (Days)
Mobilization	N/A	4	1.7
Roadway demolition	Dump trucks, loaders, bulldozers, and an excavator	2	0.8
Clearing and grubbing	A bulldozer, dump trucks, and an excavator	6	2.5
Slope flattening	A bulldozer, dump trucks, and an excavator	23	9.6
Sheet pile wall	A long bed truck, cranes, and an impact hammer	18	7.5
Roadway reconstruction	Dump trucks, skip loader, water truck, motor grader, sheepsfoot compactor, distributor, asphalt paver, pneumatic paver, and roller compactor	2	0.8
Demobilization	N/A	2	0.8
Total Days:		**57**	**23.7**

Source: Nordvik pers. comm.

Residents within the Immediate Vicinity of Construction

There are approximately 30 to 40 residences in the vicinity of the construction area. During some periods of time, construction activities would be directly adjacent to their homes. In addition, the proposed utility modifications would result in the temporary disruption of service (water, communications, electricity, gas, and sanitary sewer) during construction. Disruptions in service would be up to four hours per episode for electrical, communications, and gas and up to eight hours per episode for water and sanitary sewer. Access by auto and by foot will be maintained, subject to detour and periodic closure (less than four hours). WSAFCA would provide assistance for residents to relocate during construction activities and provide compensation to residents for reasonable rent and living expenses incurred due to relocation. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Act, residents would be provided with decent, safe, and sanitary housing. In addition, WSAFCA would provide onsite security to ensure the protection of the resident's homes and contents during relocation.

Post-Construction Operation and Maintenance

After construction of the sheet pile wall and slope flattening, the staging areas and levee slopes would be hydroseeded for erosion protection and to prevent colonization of exotic vegetation.

The only permanent facility would be the improved levee, subject to typical O&M as described under the CHP Academy APA above.

5.3.1.5 The Rivers Recreation Improvements

As stated earlier in this chapter, the trails would be designed in compliance with USACE and CVFPB standards. The recreation program improvements proposed at The Rivers EIP are listed below:

- a paved bicycle/pedestrian levee crown trail;

- landside levee embankment ramps adjacent to Todhunter Avenue and the DWR maintenance facility;
- a paved pedestrian trail meandering parallel to the levee crown trail, leading to one landing near the river;
- replacement of the locked gate crossing the levee crown at The Rivers project area with a V-chicane or other control accessible to bicyclists and pedestrians;
- a semi-circular paved landing;
- updated access controls along levee crown pathway (fencing, bollards, or turnstiles); and
- interpretive and safety signage.

The recreation improvements components are described in greater detail below.

5.3.1.5.1 Paved Bicycle Trail and Levee Embankment Ramps

- The alignment of the levee crown bicycle/pedestrian trail is proposed atop the existing aggregate base access road that is currently used for flood control maintenance and operations.
- The paved bicycle/pedestrian path would be a minimum of 12 feet wide with a 2-foot-wide compacted aggregate base shoulder on either side of the trail to match the grade. Asphalt within the paved section would be 2 to 8 inches thick with a 4- to 8-inch thick base.
- Ramp construction would involve grading to provide a smooth transition between the bike trail and the connecting trail or roadway, at a slope in compliance with the Americans with Disabilities Act (ADA) and implementing regulations.
- A retaining wall may be necessary and is proposed to maintain existing slope while accommodating the trail per ADA compliance near the western edge of the project. The wall would be modular pre-cast concrete block (i.e., gravity type) and vary in exposed height from 2 to 7 feet by 140 linear feet.

See Figure 5-3 for conceptual cross sections of the trail.

5.3.1.5.2 Paved Pedestrian Trail

- The paved pedestrian paths would be 6 feet wide with a 2-foot- wide compacted aggregate base shoulder on either side of the trail to match the grade. Asphalt within the paved section would be 2 to 8 inches thick with a 4- to 8-inch thick base.
- The design of recreation improvements would be such that there would be no direct effects on elderberry shrubs, all improvements would occur above the ordinary high water mark (OHWM), and no more than 0.5 acre of riparian vegetation would be affected during the improvement construction.

5.3.1.5.3 Access and Signage

- Permanent safety signs would be installed at select trail access points and at periodic intervals along the trails to inform users that the trail serves as a levee maintenance road and to instruct them to watch for patrolling vehicles. These signs would also inform users that portions of the trail are subject to flooding and that trail damage and related safety hazards could occur during

the flooding season. Two interpretive signs describing the geographic and biological significance of the site would be installed along the trail.

5.3.1.5.4 Semicircular Paved Landing

- A paved landing, semi-circular in shape with a 20-foot diameter, would be located on the western end of the site along the waterside berm. The landing would provide an open view of the river and act as the terminus of the paved pedestrian pathway. The landing would include manufactured benches and trash receptacles.

See Figure 5-4 for a detail of the landing.

5.3.1.5.5 Construction Details

Construction staging and parking would be limited to the same areas designed for flood program improvement staging. Construction of the bicycle/pedestrian trails would consist of compacting, paving, and striping the existing graded levee top. These effects are described in Chapter 5. Grasses and other native vegetation approved by USACE and CVFCB would be planted after project construction to stabilize soils and reduce runoff from temporary disturbance areas. All recreation improvement construction and staging that affects the performance and operation of the levee would take place during the typical construction season (April 15 to November 1). Recreation improvement construction is expected to be completed within 30 days.

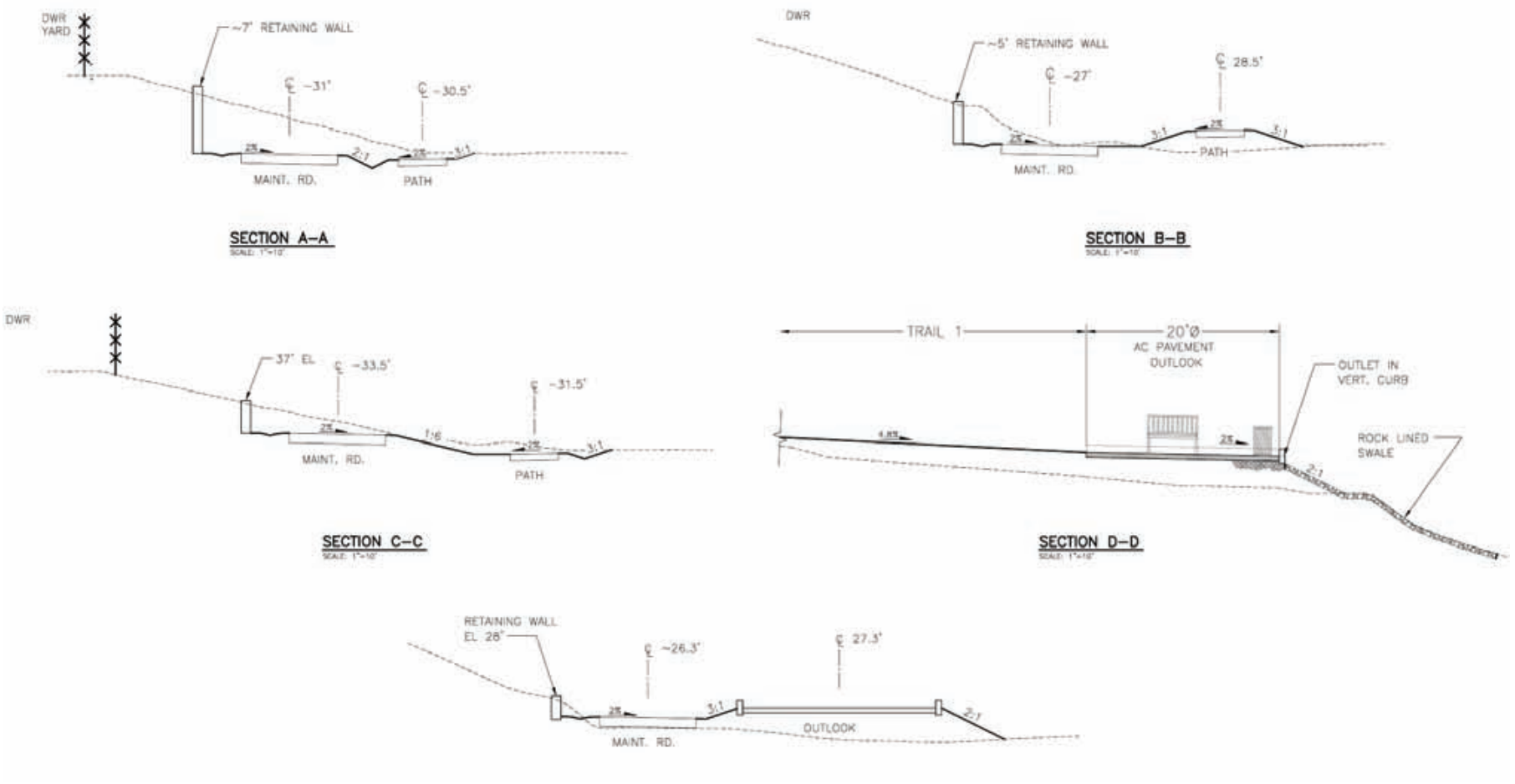
Table 5-5 lists phases of construction and types of construction equipment that may be used to construct the proposed recreation improvements.

Table 5-5. The Rivers EIP Recreation Improvements

Phase of recreation improvement construction	Required Equipment	Standard Duration (Days)
Mobilization	N/A	2
Clearing and pruning	Scraper, wheel loader, motor grader, dump truck, steel wheel loader, and water truck	5
Grading	Scraper, wheel loader, motor grader, dump truck, steel wheel loader, and water truck	8
Install pathways and landing	Dump truck, asphalt paver, asphalt sealer, striping truck, small front loader, skid steer loader and small roller	12
Install levee embankment ramp	Bulldozers, dump truck, compactor, maintainer, asphalt paver, asphalt sealer, striping truck, small front loader, skid steer loader and small roller	
Demobilization	N/A	3
Total Days:		**30**

5.3.1.5.6 Operation and Maintenance

The bikeway and all related facilities would be maintained by the City. The City would be responsible for checking trails and conducting trail repairs at the end of the flooding season and as



Source: HDR Engineering

00875.07 EIS/EIR (11-09)

Figure 5-3
Trail Details for The Rivers



Source: HDR Engineering

00875.07 EIS/EIR (03/10)

Figure 5-4
Paved Landing Details for The Rivers

needed. Maintenance of the bike trail would include sweeping, pavement repair, removal of obstacles, mowing and trimming, periodic asphalt overlays, and repair of associated facilities.

5.3.2 Environmental Commitments

As presented in Chapter 2, environmental commitments are measures incorporated as part of the project description, meaning they are proposed as elements of the proposed action and are to be considered in conducting the environmental analysis and determining effects and findings. To avoid and minimize construction-related effects, WSAFCA would implement the following environmental commitments at the program and project levels to reduce or offset short-term, construction-related effects. Measures have been developed for each of the topics below, to be applied in the program- and project-level resource analyses.

- Raptors
- USACE Levee Vegetation Guidance
- Protected Trees and Riparian Trees
- Avoid and Minimize the Spread or Introduction of Invasive Plant Species
- Stormwater Pollution Prevention Plan
- Temporary Visual Barriers between Construction Zones and Residences
- Noise-Reducing Construction Practices
- Temporary Resident Relocation, Property Acquisition, and Compensation for Loss of Business
- Traffic Control and Road Maintenance Plan
- Coordination to Ensure Minimal Overlap in Disturbance to Traffic during WSLIP Construction
- Notification of Construction Area Closure
- Minimization of Construction-Related Effects on Navigation
- Bentonite Slurry Spill Contingency Plan
- Spill Prevention, Control, and Counter-Measure Plan
- Implementation of Measures to Maintain Surface Water Quality and Groundwater Quality
- Monitoring of Turbidity in Adjacent Water Bodies
- Soil Supply Protection Measures

Section 5.4

Flood Control and Geomorphic Conditions—The Rivers Early Implementation Project

5.4.1 Affected Environment

This section describes the affected environment for hydrologic, hydraulic, geomorphic, and flood control issues in The Rivers EIP project area, including regulatory and environmental setting.

5.4.1.1 Regulatory Setting

5.4.1.1.1 Federal

The following Federal policies related to hydrologic, hydraulic, geomorphic, and flood control issues may apply to implementation of The Rivers EIP. Please see Section 3.2.3.3, Regulatory Setting, for a more complete description of each policy.

- National Flood Insurance Program
- U.S. Army Corps of Engineers Levee Design Criteria
- Executive Order 11988 (Floodplain Management)
- Section 401 of the Clean Water Act and State Regulations in Title 23 California Code of Regulations
- Code of Federal Regulations, Title 40, Part 131, Water Quality Standards
- Section 408
- Public Law 84-99 Delta Specific Standard

5.4.1.1.2 State

The following state policies related to hydrologic, hydraulic, geomorphic, and flood control issues may apply to implementation of The Rivers EIP. Please see Section 3.2.3.3, Regulatory Setting, for a more complete description of each policy.

- Central Valley Flood Protection Board
- Delta Protection Act of 1992
- Safe, Clean, Reliable Water Supply Act

5.4.1.1.3 Local

The following local policies and agencies related to hydrologic, hydraulic, geomorphic, and flood control issues may apply to implementation of The Rivers EIP. Please see Section 3.2.3.3, Regulatory Setting, for a more complete description of each policy.

- *Health and Safety Element of the Draft 2030 Countywide General Plan for Yolo County*

- *Health and Safety Section of the City of West Sacramento General Plan, Policy Document* (City of West Sacramento 1990)
- West Sacramento Area Flood Control Agency

5.4.1.2 Environmental Setting

This Rivers EIP project area is located on the west bank of the Sacramento River, just north of the confluence of the Sacramento and American Rivers. A portion of this reach runs adjacent to Riverbank Elementary School, and another portion intersects The Rivers Housing Development. The Rivers EIP Project area is approximately 4,500 feet long and is located on the Sacramento River North Levee. Levee deficiencies at this site are related to geometry, stability, and under-seepage. This section generally discusses the environmental setting related to hydrologic, hydraulic, geomorphic, and flood control issues in The Rivers EIP project area(Figure 3.2-1).For more detailed information about this resource, including climate, regional hydrology and geomorphic conditions, levee stability and levee height evaluations, see Section 3.2.2.2, Environmental Setting, of the program analysis.

5.4.1.2.1 Regional Hydrology

The Sacramento River drainage basin upstream of the American River confluence encompasses approximately 23,500 square miles. The monthly minimum, average, and maximum mean daily flows on the Sacramento River near Verona (upstream of the American River) and at Freeport (downstream of the American River) are presented in Table 5.4-1. The WSLIP program area extends down past the American River watershed. The Sacramento River at Freeport gage more closely reflects the actual project flow around the southern end of the WSLIP.

Table 5.4-1. Monthly Mean Daily Flow Statistics for Sacramento River at Verona and Sacramento River at Freeport for 1990 through 2008

	Sacramento River at Verona Station 11425500			Sacramento River at Freeport Station 11447650		
	Minimum	Average	Maximum	Minimum	Average	Maximum
January	6,460	29,888	95,600	6,560	34,311	113,000
February	6,200	34,008	76,300	6,030	39,647	94,100
March	7,730	31,811	80,700	8,300	36,793	99,500
April	3,920	22,552	73,600	4,340	26,786	91,800
May	3,870	19,199	69,600	4,640	23,511	88,600
June	3,590	16,028	60,500	6,120	19,810	70,500
July	3,830	15,051	28,400	7,030	18,434	44,500
August	4,890	14,582	22,800	7,230	16,669	26,400
September	7,350	13,525	24,700	8,150	15,188	28,600
October	4,820	9,449	18,900	5,100	11,065	23,600
November	5,230	10,239	30,700	5,530	11,912	34,800
December	5,600	19,452	73,700	6,250	22,289	96,400

Source: U.S. Geological Survey 2009. Available: <http://waterdata.usgs.gov/nwis/sw>.
Notes: Flow in cubic feet per second from January 1, 1990 to February 8, 2009.

All hydrologic information described below for the levee under investigation is derived and summarized from NHC (2007a).

Sacramento River Sites (Sacramento River North and South Levees—Reaches 1, 2, 7, and 8)

Daily streamflows have been recorded at the Sacramento River at Verona gage (gage 11425500) by the U.S. Geological Survey (USGS) since 1929. The gage is upstream of the proposed program area, at approximately RM 78.6. The Sacramento River at Sacramento (I Street) gage (gage 11447500) was operated by USGS from 1948 to 1979; it is now operated by DWR. The gage is located about 1,000 feet upstream of the I Street Bridge and about 0.5 mile downstream of the American River confluence at RM 59.5 in Reach 8. The Freeport gage (gage 11447650) is downstream of the proposed program area, at about RM 46. NHC (2007b) provides a detailed analysis of daily, seasonal, and peak flows at the I Street and Freeport gages.

Projected peak flows in the Sacramento and American Rivers were provided by MBK Engineers (2008a) based on the Sacramento and San Joaquin River basins California Comprehensive Study (Comprehensive Study) Sacramento River UNET model. In Table 5.4-2, the 100-year projected peak flow is based on a 145,000 American River peak flow and upstream Sacramento River levees overtopping without failing; the 200-year peak is based on 160,000 cubic feet per second (cfs) American River peak flow and the same levees overtopping without failing. See section on Flooding below for longitudinal profile information with resulting maximum water surface elevation profiles (for the 1/100 and 1/200 Annual Exceedance Probabilities [AEPs]), the approximate tops of the levees, and the original 1957 Flood Control Project design floodplain for the Sacramento River, Sacramento Bypass, Yolo Bypass, and DWSC.

Table 5.4-2. Projected Peak Flows for Sacramento River Sites

	Projected Peak Flow (cfs)	
Location	100-year[1]	200-year[2]
Sacramento River at Verona Gage	117,500	142,600
Sacramento River at I Street	135,600	143,300
Sacramento River at Freeport Gage	135,200	143,000
American River at H Street	145,000	160,000

Source: MBK Sacramento River UNET hydraulic model June 2008 simulations documented in *Supplemental Report for the City of West Sacramento Levee Alternatives Hydraulic Analysis - Draft*, August 6, 2008.

[1] Assumes levees overtop without failing; existing conditions and operations.

[2] Assumes levees overtop without failing; urban levees have three feet of freeboard on 1/200 AEP water surface; non-urban levees satisfy SRFCP design freeboard requirements; Folsom Dam Joint Federal Project in place.

5.4.1.2.2 Geomorphic Characteristics of the Study Area

The current geomorphology of The Rivers EIP project area is characteristic of Delta waterways. All waterways are bordered by levees. Channel alignments are preserved by ongoing levee maintenance and instream dredging. The Sacramento River in the vicinity of the project area is characterized by a low gradient and typical low-velocity flow and is composed almost entirely of deep, flat water with a

sand bed. River stage is controlled by dam and weir release upstream and is subject to diurnal tidal fluctuation. Very little sediment is stored in bars, and the bank-building process typical of lowland alluvial rivers no longer occurs. The channel width varies in the proposed project area but averages approximately 750 feet.

Levee and Bank Geometry

West Levee of the Sacramento River

The earliest maps along the Sacramento River, from 1908, show a levee on about the same alignment as at present, along the top of the west bank of the Sacramento River. This levee has been raised, widened, upgraded, and set back at some sites over the years. The Sacramento River South Levee crest is now between 17 and 23 feet high above the landslide toe, with crown elevations between 34 and 40 feet. South River Road lies along most of the levee crest, and crest widths are usually just larger than the minimum of 20 feet. Kleinfelder (2007) discusses the stability berms, drains, and other remediation measures constructed along this levee reach.

Kleinfelder (2007) also describes the levee soils and underlying foundation materials based on borings. The levee soils are typically silty sand and poorly graded clean sand. Beneath the levee materials, the typical profile consisted of a layer of fine-grained silt or clay (interpreted to be overbank deposits) underlain by up to 100 feet of sand and gravel, with interbedded silty sand and clayey sand layers. The main exception to the above typical profile is near the downstream end of the South Levee reach, where the levee is on an old railway grade. Drilling here showed a blanket of silt and clay extending at least 20 feet below the levee materials underlain by sand and/or gravel. These were interpreted to be floodbasin deposits, which appear to extend into the stream bank, overlying alluvium. The bottom of the flood basin deposits is at or above the thalweg elevation of the Sacramento River. The presence of these less-erodible deposits is thought to explain the straight, stable bank and narrow river section through the Clay Bend just near the downstream end of the South Levee reach.

Crest elevations along the Sacramento River North Levee (Reaches 8, 2, and 7) range from 34 to 44 feet NGVD 29 (Figure 3.2-4). Reach 8, the most downstream section of the Sacramento River North Levee, includes high ground that extends from the Barge Canal upstream to the Tower Bridge. The high ground is as high, or higher, than adjacent levee crests and extends at least 300 feet landward (Jones & Stokes 2006). The high ground appears to be stable and generally consists of river dredge spoils placed more than 75 years ago. Bank erosion was observed along this part of Reach 8, but it is not a concern for levee failure as the high ground functions as a very wide levee. From the Tower Bridge toward the I Street Bridge, the levee has been set back and protected as part of the River Walk project. However, the upstream 2,000 feet of Reach 8—near the I Street Bridge—has a minimum crest width and sparse bank protection and is close to the river. The erosion sites in Reach 8 are in this section of the Sacramento River North Levee.

In the middle of the Sacramento River North Levee (Reach 2), bank erosion was observed primarily where the levee crest appears to be extremely wide or where there is a substantial berm to protect the levee. From the upstream end of Reach 2, downstream for about 4,000 feet, revetment of varying size and age has been placed on the bank and levee. This revetment is often extremely steep and does not appear to meet current sizing criteria. For the next 4,000 feet, Reach 2 has some erosion protection. The patches of existing revetment do not appear to be engineered; however, the

materials on the bank are often reasonably large and the revetment appears to provide adequate protection against erosion.

The upstream end of the Sacramento River North Levee (Reach 7) includes both riprap-protected banks and wide levee crests. Downstream from the Sacramento Weir for about 7,000 feet, stream banks are generally steep; however, most are either adequately protected with riprap or the levee crest is wide. (This section includes USACE Emergency Levee Repair project at site 62.5R). At the downstream end of Reach 7, and extending for about 3,000 feet, a private contractor designed and built bank protection in the summer of 2006.

5.4.1.2.3 Levee Deficiency Analysis

Section 4 of HDR (2008a) includes the geotechnical assessment of the existing levees with regard to seepage, slope stability, and seismic vulnerabilities[1]. The information provided in HDR (2008a) is derived from two reports: *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007), and *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento* Region (URS 2007).

Data collection included 323 borings drilled with standard penetration tests and soundings made using cone penetration test equipment along the levees within the basin. Approximate stationing endpoints have been determined by URS (2007) and Kleinfelder (2007) based on similar soil characteristics within the endpoints. Deficiencies identified within the approximate stationing endpoints do not indicate the entire stretch of levee contains said deficiency; rather, a deficiency has been identified within the endpoints (HDR 2008a).

Levee Seepage Analysis

Engineering analysis evaluating levee seepage along the Sacramento River North Levee has been performed by URS (2007), and the findings were presented in their report titled *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007). URS (2007) performed their seepage analysis using water surface elevations that are different from the water surface elevations used in this chapter as determined by MBK Engineers (2007) and assumed a no-flow boundary at the center of the river (HDR 2008a).

Table 5.4-3 shows the seepage summary of the Sacramento River North Levee as completed by URS (2007). Exit gradients of 0.5 or greater for under-seepage require mitigation according to the USACE, and areas where through-seepage has been observed or projected based on soil conditions require mitigation.

Kleinfelder (2007) performed the engineering analysis evaluating levee seepage along the Sacramento River North Levee and presented their findings in a report titled *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007). Kleinfelder performed their analysis using the water surface elevations determined by MBK Engineers (2007) and assumed a total head boundary at the center of the river.

[1] Seismic vulnerabilities are discussed in Chapter 6, Geology, Seismicity, Soils, and Mineral Resources.

The seepage summaries for the Sacramento River North Levee as completed by Kleinfelder (2007) are shown in Table 5.4-4. Exit gradients of 0.5 or greater for under-seepage require mitigation according to USACE, and areas where through-seepage has been observed or projected based on soil conditions require mitigation.

In brief, the Sacramento River North Levee has a significant amount of under-seepage, whereas the other reaches have much less extensive under-seepage problems. See Table 3.2-11 and Figure 4 of HDR (2008b) for additional information.

Table 5.4-3. Seepage Summary

	Through-seepage		Under-seepage	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Sacramento River North Levee				
0+00 to 15+50		✓		
15+50 to 40+00	✓	✓	N	N
40+00 to 57+50		✓		
57+50 to 74+50	N	N	N	N
74+50 to 99+50	✓	✓	✓	✓
99+50 to 133+00				
133+00 to 141+50	✓	✓	✓	✓
141+50 to 186+50	✓	✓	✓	✓
186+50 to 217+00	✓	✓	✓	✓
217+00 to 294+00				

Source: HDR, Inc. 2008a

Table 5.4-4. Reach Summary

	Seepage, 200-Year Event		Stability, 200-Year Event		
Approximate Stationing	Through Seepage	Under Seepage	Steady State	Rapid Drawdown	Seismic
Sacramento River North Levee					
0+00 to 15+50	X			N	
15+50 to 40+00	X	N	N	N	N
40+00 to 57+50	X		N	N	N
57+50 to 74+50	N	N	N	N	N
74+50 to 99+50	X	X	X	N	X
99+50 to 133+00			X	N	X
133+00 to 141+50	X	X	X	N	X
141+50 to 186+50	X	X	X	N	N
186+50 to 217+00	X	X		N	X
217+00 to 294+00			N	N	N
294+00 to 307+50					N

Source: HDR, Inc. 2008b
N = No Analysis; X = Deficiency; Blank Cell = No Deficiency

Levee Slope Stability Assessment

URS (2007) completed an engineering evaluation of levee slope stability and the effect of rapid drawdown for the Sacramento River North Levee and presented their findings in the report titled *Phase 1 Geotechnical Evaluation Report (P1GER) West Sacramento Region* (URS 2007). As with the levee seepage analysis described above, URS (2007) used water surface elevations that are different from the water surface elevations determined by MBK Engineers (2007) in their analysis of slope stability[2]. Rapid drawdown calculations have been completed only for the 100-year event as recommended to URS by their Independent Consulting Board (HDR 2008a).

The slope stability results as completed by URS (2007) for the Sacramento River North Levee are shown in Table 5.4-5.

Kleinfelder (2007) performed the engineering analysis evaluating levee slope stability and the effect of rapid drawdown along the Sacramento River North Levee and presented their findings in a report titled *West Sacramento Levee System Problem Identification and Alternative Analysis: Volume 1—Geotechnical Problem Identification Solano and Yolo Counties, California* (Kleinfelder 2007). Kleinfelder (2007) performed their analysis using the water surface elevations determined by MBK Engineers (2007).

The slope stability findings for the Sacramento River North Levee as completed by Kleinfelder (2007) are also shown in Table 5.4-5.

In brief, the Sacramento River North Levee has significant steady state stability deficiencies. The other reaches have less or none. See Table 3.2-11 and Figure 5 of HDR (2008b) for additional information.

Table 5.4-5. Slope Stability Summary

	Steady State		Rapid Drawdown	
Approximate Stationing	100-Year Event	200-Year Event	100-Year Event	200-Year Event
Sacramento River North Levee				
0+00 to 15+50			✓	N
15+50 to 40+00	N	N	N	N
40+00 to 57+50	N	N	N	N
57+50 to 74+50	N	N	N	N
74+50 to 99+50	✓	✓		N
99+50 to 133+00	✓	✓		N
133+00 to 141+50	✓	✓		N
141+50 to 186+50	✓	✓		N
186+50 to 217+00				N
217+00 to 294+00	N	N	N	N

Source: HDR, Inc. 2008a (a compilation of data from URS 2007 and Kleinfelder 2007).

[2] Sections of the northern reaches have not been completed to date by URS; these sections will be completed in their final report projected to be issued at a later time.

Levee Geometry Evaluation

To evaluate the crown width and side slopes of the levees in the proposed program area, HDR (2008a) generated topography data by means of Light Detection and Ranging (LIDAR) using the North American Vertical Datum of 1988 (NAVD88).

In brief, most of the levees in the proposed program area, including The Rivers project area, have a geometry deficiency, and it is typically an over-steepened waterside slope that is the primary problem (HDR 2008b).

USACE requires that levees have a maximum steepness of 3:1 (H:V) waterside slopes and 3:1 (H:V) landside slope. The design criterion for the WSLIP conforms with these requirements, unless site-specific conditions permit otherwise (and USACE approval is granted based on engineering analysis to support a slope steeper than 3:1). Crown widths for primary levees are to be a minimum of 20 feet. For The Rivers EIP, it is proposed that the waterside slope would be trimmed and reshaped to a 2.5:1 slope the full length of the site (pending USACE approval). Refer to Appendix B in HDR (2008a) for tables identifying sections of the levees that do not meet the design criterion. Appendix D in HDR (2008a) contains LIDAR cross sections that have been used to evaluate levee geometry. Also refer to Figure 9 of HDR (2008b), which shows the approximate locations where a geometry deficiency has been identified.

Erosion Evaluation

An inventory of current bank erosion sites has been performed to identify sections of the levee that might incur future stability or seepage problems because of bank erosion. The erosion sites have been identified by visual inspection of the entire proposed program area. Table 3.2-11 and Figure 7 of HDR (2008b) summarize the results of the erosion evaluation. The sites have been prioritized based on significance of repairs needed to meet FEMA certification. The Sacramento River North Levee has three high priority sites totaling more than 1,100 feet. With the exception of one other long reach along the Yolo Bypass, there were no other high priority sites located in the northern West Sacramento basin (HDR 2008b).

For a complete summary of levee deficiencies, refer to Chapter 1, Introduction.

5.4.1.2.4 Flooding

Levees along the Sacramento River and other waterways provide flood control for the city of West Sacramento and conveyance for waters from upstream to the Delta. High winter flows can stress levees and berms. Longer flood durations can contribute to levee seepage and potentially structural levee failure. Flood water surface elevations can exceed levee heights and cause overtopping and partially controlled flooding of the protected areas behind the levee. Overtopped levees may maintain structural integrity and would not be considered failed levees. However, the erosive forces that occur during overtopping eventually may cause a structural failure and uncontrolled flooding in the protected areas behind the levee. To maintain the integrity of the flood control system, locations with the potential for failure have been and are being identified and remedied.

MBK Engineers (2007, 2008a, and 2008b) has developed water surface profiles for use in this analysis. Their reports describe and present the results of a hydraulic analysis that was made to determine 1/100 and 1/200 AEP (commonly referred to as 100-year and 200-year) water surface elevations in the surrounding waterways, as well as the potential worst case flood depth for the

South Cross Levee. The MBK version of the Comprehensive Study Sacramento River UNET model adopted for the Natomas Levee Improvement Program was used for this analysis. This adopted version is capable of modeling anticipated levee breaks or of allowing levee overtopping without failures. UNET is a one-dimensional unsteady open-channel flow model with the ability to simulate exchange of flow over levees with storage areas. The MBK UNET model results were a maximum composite of simulations made using hydrologic data for two storm centering scenarios: Sacramento River at latitude of Sacramento and Feather River at Shanghai Bend. In addition, the American River peak flow in the 100-year flood was 145,000 cfs, the current FEMA condition and in the 200-year flood was 160,000 cfs, the expected future peak flow.

The resulting maximum water surface elevation profiles (for the 1/100 and 1/200 AEPs), the approximate tops of the levees, and the original 1957 Flood Control Project design floodplain for the Sacramento River and Sacramento Bypass are provided in Figures 3.2-4 through 3.2-7 and Table 3.2-13 of the program section.

The MBK UNET model indicates no levee overtopping will occur along the Sacramento River or the Sacramento Bypass for the 100-year or the 200-year design floodflows. Nonetheless, levee height design criteria are not met for the Sacramento River North Levee. More information is provided in MBK Engineers' *Hydraulics Report for the City of West Sacramento Levee Alternatives Analysis* (2007) and Northwest Hydraulic Consultants' *West Sacramento Levees System: Problem Identification Report, Erosion Assessment and Treatment Alternatives, Draft for Review* (2007a).

Refer to the program section for a description of flood elevations and levee height evaluation by reach and for a complete description of modeling of hydraulic effects.

5.4.1.2.5 Past Sea-Level Rise in the Program Area

MBK Engineers (2009b) applied the USACE sea-level rise guidance (U.S. Army Corps of Engineers 2009b) to the WSLIP in order to determine the effects of potential sea-level rise on the program area. Since the WSLIP sea-level rise analysis is in support of the pre-existing project design, many of the points in the USACE policy guidance do not apply, particularly those that refer to the comparison of project alternatives. The MBK Engineers (2009b) report uses the procedure for calculating sea-level rise that is identified in the USACE guidance, and applies that procedure to the proposed WSLIP design.

Analysis of Historic Mean Sea Level Change

As described in the MBK Engineers (2009b) report, the nearest tide station with sufficient period of record (40+ years recommended) is the NOAA station 9414290 at San Francisco, CA. Tidal records for this station have been maintained back to the 1850s.

The NOAA Center for Operational Oceanographic Products and Services (CO-OPS) has analyzed the historic mean sea level for this site has been shown to be increasing at a rate of 2.01mm/yr (California Climate Change Center 2009 as cited in MBK Engineers 2009b).

Projections of future mean sea level change are discussed in the program section.

5.4.2 Environmental Consequences

This section describes the environmental consequences relating to hydrologic, hydraulic, geomorphic, and flood control issues for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects tier from the program analysis effects described in Section 3.2.3.3, Effects and Mitigation Measures.

5.4.2.1 Assessment Methods

The assessment methods used to determine effects on hydrology, hydraulics, geomorphology, and flood control issues resulting from The Rivers EIP include a review of the MBK Engineers (2005) hydraulic analysis of the effects of potential cumulative development in the Sacramento River corridor floodway between Verona and Courtland on flood stages and flows, and on professional judgment.

5.4.2.2 Determination of Effects

The criteria used for determining the significance of an effect on hydrology, hydraulics, geomorphology, and flood control are based on NEPA standards, Appendix G of the State CEQA Guidelines (Environmental Checklist) and standards of professional practice.

Effects on hydrologic or geomorphic conditions may be considered significant if implementation of an alternative would:

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site;
- substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;
- place within a 100-year flood hazard area structures that would impede or redirect floodflows; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Effects on flood control may be considered significant if implementation of an alternative would:

- significantly raise flood stage elevations;
- increase the frequency and duration of inundation of lands; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee.

An effect on the levee system is considered significant if an alternative would substantially increase any of the following:

- seepage,
- levee settlement,

- wind erosion,
- bank erosion or bed scour,
- sediment deposition, or
- subsidence of land adjacent to levees.

In addition, an effect on the levee system is considered significant if an alternative would substantially decrease any of the following:

- levee stability;
- inspection, maintenance, or repair capabilities;
- current level of levee slope protection;
- emergency response capabilities;
- channel conveyance capacity; or
- the ability of the levees to withstand seismic forces.

5.4.3 Effects and Mitigation Measures

Effects related to mean sea level change are only addressed in the No Action Alternative in the program section because the WSLIP program area is relatively insensitive to the rates of sea-level rise. Of all the scenarios analyzed, only the high sea-level rise rate 100 years after the project is constructed shows greater than one-tenth of a foot stage increase in the Sacramento River, Yolo Bypass, or Sacramento Bypass in the WSLIP program area.

5.4.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. Current levee operations and maintenance activities would continue, but there would be no change in the geomorphic and flood control regimes relative to existing conditions.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the magnitude described in the Flood Control and Geomorphic Conditions program analysis (Section 3.2.3.3.1). In summary, those effects could include excessive saturation and weakening of all of the city's levees, reducing levee integrity and resulting in an even greater risk of levee collapse, failure and further flooding and damage. Additionally, proposed levee strengthening projects in upstream areas may transfer flood risk to the study area if the Sacramento River North Levee remains below current engineering standards while other upstream levees are improved to meet or exceed current standards. However, given the uncertainty of the occurrence or magnitude of such an event, potential effects on geomorphic and flood control conditions cannot be quantified based on available information. Compliance with future vegetation policy enforcement on the Sacramento River North Levee would not have any noteworthy effects on the geomorphic and/or flood control regimes of the Sacramento River North Levee.

5.4.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on hydrologic, hydraulic, geomorphic, and flood control issues. A description of the effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	Less than significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A

Effect FC-3: Alteration of the Existing Drainage Pattern of the Site or Area

Implementation of slope flattening will involve earthwork on the landward side of the levee. The new material on the landside could alter surface runoff patterns. Because interference with drainage could cause or exacerbate local flooding, this effect may be significant. The implementation of Mitigation Measure FC-FC-MM-1 would reduce this effect to less than significant.

Mitigation

Mitigation Measure FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design

WSAFCA and their primary contractors for engineering design and construction will ensure that the following measures are implemented to avoid significant effects associated with disruption of local drainage systems.

During project design, project engineers will coordinate with owners and operators of local drainage systems and landowners served by the systems to evaluate pre- and post-WSLIP drainage needs and design features to remediate any project-related substantial drainage disruption or alteration in runoff that would increase the potential for local flooding. If substantial alteration of runoff patterns or disruption of a local drainage system could result from a project feature, a drainage study will be prepared as part of project design. The study will consider the design flows of any existing facilities that would be crossed by project features and develop appropriate plans for relocation or other modification of these facilities and construction of new facilities, as needed, to ensure equivalent functioning of the system during and after construction. If no drainage facilities (e.g., ditches, canals) would be affected, but project features would have a substantial significant effect on runoff amounts and/or patterns, new drainage systems will be included in the design of project alternatives to ensure that the project would not result in new or increased local flooding. Any necessary features to remediate project-induced drainage problems will be constructed before the project is completed or as part of the project, depending on site-specific conditions.

Effect FC-6: Decrease in Through and Under-Seepage

Through- and under-seepage has the potential to weaken levee foundations. The implementation of a slurry cutoff wall would reduce or eliminate the potential for seepage. Slurry cutoff walls create walls of impermeable material that act as a barrier to water moving laterally through a levee, greatly reducing or eliminating the potential for through-seepage. Implementation of a slurry wall would result in beneficial effects on flood conditions in the study area.

Effect FC-7: Transfer of Seepage to Upstream or Downstream Levees

Installation of a DSM cutoff wall at The Rivers project area may have a slight effect on the potential for seepage to occur through levee sections immediately upstream or downstream, as a result of redirection of hydraulic force.

However, the change in hydrologic conditions resulting from this treatment is not expected to result in a substantial increase in seepage through or under adjacent levees because any upstream or downstream levee will be engineered appropriately to an equal level of protection. Incremental improvements to the system will be made over a period of years and these improvements would reduce or eliminate any seepage problems.

Effect FC-8: Increase in Levee Slope Stability

The proposed slope flattening will repair and reshape slopes that are too steep and do not meet current standards. This would result in an increase in levee slope stability and a beneficial effect for geomorphic and flood conditions.

5.4.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on hydrologic, hydraulic, geomorphic, and flood control issues. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
FC-3: Alteration of the Existing Drainage Pattern of the Site or Area	Significant	Less than significant	FC-MM-1: Coordinate with Owners and Operators, Prepare Drainage Studies as Needed, and Remediate Effects through Project Design
FC-6: Decrease in Through- and Under-Seepage	Beneficial	N/A	N/A
FC-7: Transfer of Seepage to Upstream or Downstream Levees	Less than significant	N/A	N/A
FC-8: Increase in Levee Slope Stability	Beneficial	N/A	N/A

Effect FC-3: Alteration of the Existing Drainage Pattern of the Site or Area

Implementation of slope flattening will involve earthwork on the landward side of the levee. The new material on the landside could alter surface runoff patterns. Because interference with drainage could cause or exacerbate local flooding, this effect may be significant. The implementation of

Mitigation Measure FC-FC-MM-1, as described above under Rivers APA would reduce this effect to less than significant.

Effect FC-6: Decrease in Through and Under-Seepage

Through- and under-seepage has the potential to weaken levee foundations. The implementation of a slurry cutoff wall would reduce or eliminate the potential for seepage. Slurry cutoff walls create walls of impermeable material that act as a barrier to water moving laterally through a levee, greatly reducing or eliminating the potential for through-seepage. Implementation of a slurry wall would result in beneficial effects on flood conditions in the study area.

Effect FC-7: Transfer of Seepage to Upstream or Downstream Levees

Installation of a deep sheet pile wall at The Rivers project area may have a slight effect on the potential for seepage to occur through levee sections immediately upstream or downstream, as a result of the redirection of hydraulic force.

However, the change in hydrologic conditions resulting from this treatment is not expected to result in a substantial increase in seepage through or under adjacent levees because any upstream or downstream levee will be engineered appropriately to an equal level of protection. Incremental improvements to the system will be made over a period of years and these improvements would reduce or eliminate any seepage problems.

Effect FC-8: Increase in Levee Slope Stability

The proposed slope flattening will repair and reshape slopes that are too steep and do not meet current standards. This would result in an increase in levee slope stability and a beneficial effect for geomorphic and flood conditions.

Section 5.5

Water Quality and Groundwater Resources—The Rivers Early Implementation Project

5.5.1 Affected Environment

This section described the affected environment for water quality and groundwater resources in The Rivers EIP project area, including the regulatory and environmental settings.

5.5.1.1 Regulatory Setting

5.5.1.1.1 Federal

The following Federal regulations related to water quality and groundwater resources may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.3.2.1, Regulatory Setting, for a more complete discussion.

- Clean Water Act
- Section 404: Permits for Fill Placement in Waters and Wetlands
- Section 402: Permits for Discharge to Surface Waters
- Section401: Water Quality Certification
- Section 303: Impaired Waters

5.5.1.1.2 State

The following policies or agencies related to water quality and groundwater resources may apply to the implementation of The Rivers EIP. Please see Section 3.3.2.1, Regulatory Setting, for a more complete discussion.

- Porter-Cologne Water Quality Control Act
- Central Valley Regional Water Quality Control Board
- Basin Plans and Water Quality Objectives
- Water Quality Objectives by Region
- State Implementation Plan

5.5.1.1.3 Local

The following local regulations or agencies related to water quality and groundwater may apply to the implementation of The Rivers EIP. Please see Section 3.3.2.1, Regulatory Setting, for a more complete discussion.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

- *Solano County General Plan*

5.5.1.2 Environmental Setting

The following considerations are relevant to surface water quality and groundwater resources in The Rivers EIP project area. Existing surface water quality and groundwater quality are summarized below and more fully described in Section 3.32.2, Environmental Setting.

5.5.1.2.1 Surface Water Quality

The water quality of the Sacramento River is good to excellent, with relatively cool water temperatures, low BOD, medium to high DO, and low mineral and nutrient content. In general, the surface water quality of the Sacramento River is representative of agricultural return flows, urban runoff, and natural sedimentation from scouring. Water quality issues of concern within the Sacramento River include TSS and turbidity, DO, temperature, electrical conductivity, and pH. The Sacramento Bypass diverts Sacramento River flood flows around the city of West Sacramento.

5.5.1.2.2 Groundwater Quality

Groundwater levels in the Yolo Sub-basin are affected by drought, pumping, and reduced surface water discharge. Groundwater quality is considered good for agricultural and municipal purposes, although the water is hard.

5.5.2 Environmental Consequences

This section describes the environmental consequences relating to surface water and groundwater quality for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in table format. These effects tier from the program analysis effects described in Section 3.3.3.3, Effects and Mitigation Measures.

5.5.2.1 Assessment Methods

This evaluation of surface water quality and groundwater quality is based on professional standards and information obtained from the Central Valley RWQCB, State Water Board, and DWR.

The key effects were identified and evaluated based on the physical characteristics of The Rivers EIP project area and the magnitude, intensity, and duration of activities related to the construction of this project.

5.5.2.2 Determination of Effects

For this analysis, an effect pertaining to surface water quality and groundwater quality was considered analyzed under CEQA and NEPA if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.):*

- violate water quality standards or waste discharge requirements;

- substantially deplete groundwater supplies or interfere substantially with ground water recharge;
- substantially degrade water quality; and
- alter regional or local hydrology resulting in substantial increases in erosion or sedimentation.

5.5.3 Effects and Mitigation Measures

5.5.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee alternatives would be made to increase the level of protection. No construction-related effects relating to water quality such as earthmoving that result in increased turbidity, or incidental releases of construction-related contaminants would occur. Therefore, there would be no effect on surface or groundwater quality or resources attributable to the implementation of the No Action Alternative.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Water Quality and Groundwater Resources program analysis (Section 3.3.3.3.1). In summary, those effects could include spreading of contaminants from stored chemicals, septic systems, and flooded vehicles into the Sacramento Bypass, Yolo Bypass, Delta, and other nearby waterways, as well as potentially contaminating soils and groundwater. Loss of eroded levee foundation and eroded topsoil from inundated areas would increase turbidity and total dissolved solids in nearby waterways, impairing beneficial uses. Furthermore, if a levee breach were to occur, emergency construction and repair activities would likely be implemented without the use of BMPs and could result in the release of hazardous construction materials such as oil and other petroleum related products. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

5.5.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on water quality and groundwater resources, as described in the program analysis (Section 3.3.3.3, Effects and Mitigation Measures). A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	

Effect	Finding	With Mitigation	Mitigation Measure
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	Less than significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering

Effect WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids

Construction of The Rivers APA would require construction-related earth-disturbing activities that potentially cause erosion and sedimentation to adjacent water bodies. Because this type of construction would occur close to the Sacramento River sedimentation and turbidity could occur in the river. Two environmental commitments (see Section 2.9 of Chapter 2, Alternatives for a full description) are included as part of the project that would reduce the likelihood that this effect would occur, or reduce the effect should it occur. These commitments include the development of the SWPPP and monitoring of turbidity during construction activities. Site-specific erosion control measures would be developed as part of a SWPPP, a requirement of the NPDES General Construction Permit. A SWPPP typically contains, but is not limited to, the following described best management practices:

- **Timing of construction.** Conduct earthwork during the typical construction season.
- **Staging of construction equipment and materials.** Stage construction equipment and materials on the landside of the subject levee reaches. To the extent possible, stage equipment and materials in areas that already have been disturbed.
- **Soil and vegetation disturbance.** Minimize ground and vegetation disturbance during construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations.
- **Grading spoils.** Stockpile soil and grading spoils on the landside of the subject levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, straw bales) around the base of stockpiles to intercept runoff and sediment during storm events. If necessary, cover stockpiles with geotextile fabric to provide protection against wind and water erosion.
- **Sediment barriers.** Install sediment barriers on graded or otherwise-disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters.
- **Site stabilization.** Install native plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials may include an erosion control seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and a mulch tackifier, may be installed as needed to stabilize disturbed areas until vegetation becomes established.

As part of a turbidity monitoring program, WSAFCA or its contractor will monitor turbidity in the adjacent water bodies, where applicable criteria apply, to determine whether turbidity is being affected by construction and ensure that construction does not result in a rise in turbidity levels above ambient conditions, in accordance with the Central Valley RWQCB Basin Plan turbidity

objectives. The monitoring program will include monitoring ambient turbidity conditions upstream and 200 feet downstream of construction activities. Grab samples will be collected at a downstream location that is representative of the flow near the construction site. If there is a visible sediment plume being created from construction, the sample should represent this plume. Since construction is not proposed to encroach upon the Sacramento River, monitoring should occur once a week on a random basis.

If turbidity limits exceed Basin Plan standards, construction-related earth-disturbing activities will slow to a point that results in alleviating the problem. WSAFCA or its contractor will notify the Central Valley RWQCB of the issue and provide an explanation of the cause. The implementation of these environmental commitments would reduce any potential effects to a less-than-significant level.

Effect WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials

The Rivers project construction activities will involve storage, use, or discharge of toxic and other harmful substances near the Sacramento River (or in areas that drain to the Sacramento River or other water bodies). Construction activities would involve the use of heavy equipment, cranes, compactors and other construction equipment that uses petroleum products (e.g., fuels, lubricants, hydraulic fluids, coolants). All of these materials may be toxic to fish and other aquatic organisms. An accidental spill or inadvertent discharge of these materials could affect the water quality of the river or water body.

There are three environmental commitments included in the program that would reduce the effect of such a release should it occur or reduce the likelihood that a release would occur. These environmental commitments include the development of the SWPPP, SPCCP and a bentonite slurry spill contingency plan (BSSCP). Typical elements of the SWPPP are described above under Effect WQ-1. All three environmental commitments are described in detail in Section 2.9 of Chapter 2, Alternatives, and are summarized below.

An SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. WSAFCA or its contractor will develop and implement an SPCCP to minimize the potential for and effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will describe spill sources and spill pathways in addition to the actions that would be taken in the event of a spill (e.g., an oil spill from engine refueling would be immediately cleaned up with oil absorbents). The SPCCP will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures and spill response kits. It will also describe how and when employees are trained in proper handling procedure and spill prevention and response procedures.

A BSSCP is typically developed for activities that involve the use of bentonite materials (e.g., the construction of slurry walls). The BSSCP is intended to minimize the potential for a frac-out associated with excavation and tunneling activities, provide for timely detection of frac-outs, and ensure and “minimum-effect” response in the event of a frac-out and release of excavation fluid (i.e., bentonite used for the construction of slurry walls).

Release of contaminants into adjacent water bodies could result in significant effects. Adherence to these environmental commitments and the implementation of Mitigation Measure WQ-MM-1 should spills occur would reduce this effect to less than significant.

Mitigation

Mitigation Measure WQ-MM-1: Implement Measures to Maintain Surface Water Quality and Groundwater Quality

If an appreciable spill has occurred and results determine that project activities have significantly affected surface or groundwater quality, a detailed analysis will be performed by a registered environmental assessor or professional engineer to identify the likely cause of contamination. This analysis will conform to American Society for Testing and Materials (ASTM) standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, WSAFCA and its contractors will select and implement measures to control contamination, with a performance standard that surface water quality and groundwater quality must be returned to baseline conditions.

Effect WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation

Trenching and excavation associated with slurry wall construction may reach a depth that could expose the water table, in which case an immediate and direct path to the groundwater basin would become available for contaminants to enter the groundwater system. Primary construction-related contaminants that could reach groundwater include increased sediment, oil and grease, and hazardous materials.

In addition, while dewatering of the construction area (e.g., trenches dug for slurry wall construction that may be filled with groundwater) is not expected to occur to implement the flood program alternatives, if it became necessary, it could result in the release of contaminants to surface or groundwater.

The construction of a slurry cutoff wall is not expected to require digging or trenching at depths where groundwater aquifers utilized for drinking water occur. If trenching activities were to incidentally reach a groundwater aquifer utilized for drinking water, the slurry wall material is relatively benign and would not remain in a liquid state long enough to allow for significant lateral movement within the aquifer.

As discussed in Section 5.19, Public Health and Hazards, prior to all construction activities, the WSAFCA will complete Phase I and, if necessary, Phase II Environmental Site Assessment Investigations that will include analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations. If hazardous substances are found, WSAFCA or its contractor will implement required measures for the proper transport and disposal of such materials in accordance with the appropriate local, state and Federal laws and regulations.

Currently, there is a known plume of groundwater contamination near The Rivers EIP project area (Figure 3.3-1). The plume is a result of multiple leaking underground storage tanks, removed in 1994, located at the DWR Maintenance Yard. There are some private drinking water wells in this area and through installation and use of monitoring wells, DWR continues to monitor the plume to determine its flow patterns and to ensure minimal effects on drinking water wells. The leaking

storage tanks were discovered in 1994 and have since been fixed (California Department of Water Resources 2009).

Of the multiple monitoring wells shown on Figure 3.3-1, three are used for groundwater quality sampling (MW-1, MW-2 and MW-3). The three on-site wells were routinely sampled for aromatic volatile organic compounds benzene, toluene, ethylbenzene, and total xylenes (BTEX), along with gasoline additive oxygenate compounds. These oxygenates include methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA) (California Department of Water Resources 2009).

The latest quarterly monitoring report results showed no detectable concentrations of contaminants of concern at or above laboratory reporting limits. However, past sampling and analysis have determined that MTBE is the main contaminant of concern on the site. (California Department of Water Resources 2009.) No other contaminants of concern were ever detected at or above the laboratory reporting limits from any of the monitoring wells.

In addition to groundwater quality sampling, groundwater elevation is also monitored. Groundwater elevations were measured ranging from 6.71 feet on June 3, 2009 (MW-13) (eastern most portion of the plume on the land side of the levee), to 9.21 feet on April 27, 2009 (MW-8, northern south side of the plume) (California Department of Water Resources 2009). During that same period the depth to groundwater was approximately 29 to 35 feet below ground surface (bgs) on the levee, and 13 to 15 feet bgs south of the levee and the plume (California Department of Water Resources 2009). DWR concluded that groundwater levees correlate to the Sacramento River stage and data from the levels indicate that the groundwater appears to flow east (see Figure 3.3-1 for flow direction).

Construction of the slurry wall is expected to be 2 to 3 feet wide and reach a depth from 80 to 135 feet bgs, which is much deeper than the 29- to 35-foot depth to groundwater. In addition, the slurry wall would bisect a small portion of the north side of the groundwater plume (Figure 3.3-1). Based on the groundwater flow direction (see Figure 3.3-1), the slurry wall would not redirect the contaminated plume to any known drinking water wells in the area. In addition, the small area of the plume (see shaded area on Figure 3.3-1) on the river side of the slurry wall would be blocked by the slurry wall from migrating towards the elementary school. This portion of the plume would likely travel along the north side of the slurry wall with the flow direction of the Sacramento River. Exact travel time is unknown, so it is unclear as to how long it would take this portion of the plume to pass the slurry wall approximately 2,000 feet downstream. However, since groundwater travel time is extremely slow, potential contamination would be slowly diluted over a long period of time.

DWR recommends that groundwater quality and elevation sampling continue indefinitely on a quarterly basis along with installation of new monitoring wells in strategic locations following the groundwater flow direction to characterize any potential movement of the plume (California Department of Water Resources 2009).

Effect on groundwater and drinking water quality from operation and construction may be significant. However, WSAFCA will adhere to environmental commitments of the SWPPP, the SPCCP, and the BSSCP, as summarized above under Effects WQ-1 and WQ-2. Adherence to those environmental commitments and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2 would reduce any effects to less than significant.

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Before discharging any dewatered effluent to surface water, WSAFCA or its contractors will obtain a Low Threat Discharge and Dewatering NPDES permit from the Central Valley RWQCB. Depending on the volume and characteristics of the discharge, coverage under the Central Valley RWQCB's NPDES General Construction Permit or General Dewatering Permit is possible. As part of the permit, the permittee will design and implement measures as necessary so that the discharge limits identified in the relevant permit are met. For example, if dewatering is needed during the construction of the slurry wall at The Rivers EIP project area, then the Low Threat Discharge and Dewatering NPDES permit would require proper disposal of the water due to the known petroleum plume present in the area. As a performance standard, these measures will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable. Implemented measures may include the retention of dewatering effluent until particulate matter has settled before it is discharged, use of infiltration areas, and other BMPs. Final selection of water quality control measures will be subject to approval by WSAFCA.

WSAFCA will verify that coverage under the appropriate NPDES permit has been obtained before allowing dewatering activities to begin. WSAFCA or its agent will perform routine inspections of the construction area to verify that the water quality control measures are properly implemented and maintained. WSAFCA will notify its contractors immediately if there is a non-compliance issue and will require compliance.

5.5.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on water quality and groundwater resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids	Less than significant	N/A	
WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials	Less than significant	N/A	
WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation	Significant	Less than significant	WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering

Effect WQ-1: Effects on Surface Water Quality from Excessive Turbidity or Total Suspended Solids

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Effect WQ-2: Release of Contaminants into Adjacent Surface Water Bodies from Construction-Related Hazardous Materials

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Effect WQ-3: Effects on Groundwater or Drinking Water Quality Resulting from Construction and Operation

This effect is the same as described above under The Rivers APA. This effect is considered less than significant with the implementation of mitigation measures WQ-MM-1 and WQ-MM-2, also described above.

Section 5.6

Geology, Seismicity, Soils, and Mineral Resources—The Rivers Early Implementation Project

5.6.1 Affected Environment

This section describes the affected environment for geology, seismicity, soils, and mineral resources in The Rivers EIP project area, including the regulatory and environmental setting.

5.6.1.1 Regulatory Setting

5.6.1.1.1 State

The following state policies related to geology, seismicity, soils, and mineral resources may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.4.2.1, Regulatory Setting, for a more complete description of each policy.

- Alquist-Priolo Earthquake Fault Zoning Act
- Seismic Hazards Mapping Act
- California Building Standards Code
- California Surface Mining and Reclamation Act

5.6.1.1.2 Local

The following local policies related to geology, seismicity, soils, and mineral resources may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.4.2.1, Regulatory Setting, for a more complete description of each policy.

- *Draft 2030 Countywide General Plan* for Yolo County
- *City of West Sacramento General Plan*
- Grading and Erosion Control Ordinances

5.6.1.2 Environmental Setting

This section discusses the environmental setting related to soil characteristics, mineral resources, and seismic hazards for The Rivers EIP.

5.6.1.2.1 Study Area

Geology and Topography

The surface and subsurface distributions of sandy and clayey deposits in The Rivers EIP project area are a function of former river positions on the landscape, present-day geomorphic processes adjacent to the river positions on the landscape, and present-day geomorphic processes adjacent to

the river channel (i.e., flooding and deposition) (William Lettis & Associates 2007). Helley and Harwood (1985) compiled previous regional studies of the quaternary geology of the Sacramento Valley. Previous geologic mapping in the West Sacramento study area generalized the surficial deposits as Quaternary alluvium (Qa) proximal to the modern river channel and undifferentiated Quaternary basin (Qb) deposits away from the modern river channel. Helley (1985) differentiates basin deposits from alluvium on the basis of composition, including only those deposits that are finer-grained and frequently organic-rich, and suggests these deposits were distal deposits where energy conditions were much lower. Both of these map units are considered Holocene age.

5.6.1.2.2 Soils

The Rivers EIP project area comprises two distinct soil map units as identified by the USDA Conservation Service (U.S. Department of Agriculture Soil Conservation Service 1972): Lang sandy loam and Sycamore silt loam (Figure 5.6-1). These soil types are characterized in Table 3.4-2, Section 3.4.2.2.2. The under-seepage deficiencies identified at The Rivers project area are caused primarily by the presence at depth of coarse, permeable soils (sands and gravels) that translate hydraulic pressure during flood stage beneath the levees and destabilize them. In other words, the coarse-textured soil material common to the Lang and Sycamore soil series found at The Rivers project area facilitates seepage pathways, which compromise levee integrity.

5.6.1.2.3 Mineral Resources

No commercial mining operations are known to have occurred in West Sacramento. Most of the area is classified as MRZ-1 by the California Division of Mines and Geology, which indicates no significant mineral deposits are present. The portion of the West Sacramento area that borders the Sacramento River (and henceforth the study area vicinity) is classified as MRZ-3, which means aggregate deposits of undetermined significance occur there. Lands classified as MRZ-1 or MRZ-3 are not affected by state policies pertaining to the maintenance of access to regionally significant mineral deposits under the California Surface Mining and Reclamation Act of 1975.

5.6.1.2.4 Seismic Hazards

Seismic hazards refer to earthquake fault ground rupture and ground shaking (primary hazards), as well as liquefaction and earthquake-induced slope failure (secondary hazards). Localized ground shaking and liquefaction are the most significant seismic hazards in Yolo County (Yolo County 1983).

Primary Seismic Hazards—Surface Fault Rupture[1] and Groundshaking

The project area is located in a region of California characterized by low seismic activity. The UBC recognizes no active seismic sources in the project vicinity (International Conference of Building Officials 1997), and no active faults are known to cross the project area. The project area is located within UBC Seismic Hazard Zone 3. Refer to the program description for further information.

[1] *Surface fault rupture* is a rupture at the ground surface along an active fault, caused by earthquake or creep activity.



Figure 5.6-1
Soil Types at The Rivers Early Implementation Site

Q:\PROJECTS\HDR\00875_07\MAPDOC\SOILS\RIVERS_SOIL_MAP_8_1_2X11_20091118.MXD SS (11-19-09)

Liquefaction

Poorly consolidated, water-saturated fine sands located within 30 to 50 feet of the surface typically are considered the most susceptible to liquefaction. Soils and sediments that are not water-saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction (California Division of Mines and Geology 1997).

URS performed a liquefaction-triggering analysis to evaluate whether any levee or underlying foundation materials potentially would liquefy during the considered earthquake events. Criteria for susceptibility to liquefaction included soil type, liquid limit, plasticity index, water content, and fines content. If the material was considered to be susceptible to liquefaction, steps were completed to further evaluate the liquefaction potential of the material considering the earthquake loading. In contrast, if the plasticity of the material was high enough to preclude liquefaction, the material was classified as non-liquefiable, irrespective of the earthquake loading (URS 2007). The Sacramento River North Levee may exhibit liquefaction during a seismic event. (HDR, Inc. 2008a.)

5.6.2 Environmental Consequences

This section describes the environmental consequences relating to geology, seismicity, soils, and mineral resources for the proposed Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.4.3.3, Effects and Mitigation Measures.

5.6.2.1 Assessment Methods

Evaluation of the geology, seismicity, and soils effects in this section is based on the information provided by technical maps, reports, and other documents that describe the geologic, seismic, and soil conditions of the study area. This information was then compared to the type and location of proposed flood and recreation alternatives to determine whether effects would occur.

5.6.2.2 Determination of Effects

Criteria for determining the significance of effects related to geology, soils, and mineral resources were developed based on the environmental checklist form in Appendix G of the State CEQA Guidelines (14 CCR 15000 *et seq.*). An effect related to geology, soils, and seismicity was considered significant if it would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
- strong seismic ground shaking;

- seismic-related ground failure, including liquefaction; or
- landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- be located on expansive soil, as defined in Table 18-1-B of the UBC (1994), creating substantial risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater;
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

5.6.3 Effects and Mitigation Measures

5.6.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects involving direct ground-disturbing activities or changes to flood control facilities that could result in changes in geology, seismicity, soils, or mineral resources would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Geology, Seismicity, and Soils program analysis (Section 3.4.3.3.1). In summary, these effects could include loss of topsoil, additional levee collapse, alteration of regional and local hydrology, and an increase in erosion and sedimentation. It is assumed that these effects would be significant; however, given the uncertainty of the occurrence or magnitude of such an event, the effects cannot be quantified based on available information.

Furthermore, the beneficial effects attributable to program implementation such as improved levee stability and decreased levee bank erosion would not be realized under the No Action Alternative.

5.6.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on geology, seismicity, soils, and mineral resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A

Effect GEO-1: Effects on Levee Stability

The proposed slope flattening would improve the stability of the Sacramento Bypass Levee by further reducing seepage and the potential for seepage-related failures by reducing hydrostatic exit gradients, creating more stable slopes and reducing erosion. Therefore, this effect would be beneficial.

Effect GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction

Based on available knowledge of fault location and locations of earthquake epicenters, the risk of groundshaking in the study area is low. Nonetheless, a large earthquake on a nearby fault could cause groundshaking in the study area, which could result in liquefaction or associated ground failure, such as lateral spreading or differential settlement which could in turn result in structural loss, injury, and death.

The Sacramento River North Levee contains soils that may be subject to liquefaction. Implementation of the proposed project would not substantially alter the composition of the subject levees or foundation soils or increase their susceptibility to liquefaction. The project does propose the construction of a slurry cutoff wall to reduce seepage and increase flood control that might sustain damage from groundshaking or liquefaction and endanger people during a seismic event.

However, the potential for failure of this structure from groundshaking would depend on the degree of levee saturation during an earthquake. A high level of saturation would likely only occur during a major flood event. The probability that a large regional earthquake would occur during a major flood event is relatively low, but such coincidence is not impossible. Nonetheless, because of the relative small likelihood of such coincidental events, and because the expected magnitude of groundshaking from large regional earthquakes is relatively low in the study area, the potential for failure or damage of the slurry cutoff wall is considered to be less than significant. No mitigation is required.

Effect GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance

The grading, trenching, and other earthwork that would be conducted during construction of the CHP APA would result in substantial ground and vegetation disturbance. These disturbances would

increase the hazard of erosion and could temporarily increase erosion and sedimentation rates above existing levels. Because most of the earthwork would be conducted on and immediately adjacent to the levee, accelerated erosion and sedimentation resulting from construction-related ground and vegetation disturbance would not result in the loss of appreciable quantities of topsoil resources. In addition, most ground-disturbing activities would occur during the typical construction season, when conditions are generally dry, further reducing the potential for construction-related erosion.

Site-specific measures that would control erosion would be described in more detail in the SWPPP, which is included in the environmental commitments of the program, described in further detail in Section 2.9 of Chapter 2, Alternatives, and summarized in Section 5.5, Water Quality of this chapter. The SWPPP is a requirement of the NPDES General Construction Permit.

In addition, WSAFCA or its contractor would monitor turbidity in the Sacramento River to determine whether turbidity is being affected by construction and ensure that construction does not affect turbidity levels or acceptable sedimentation loads (as discussed in Section 3.3, Water Quality and Groundwater Resources). With these project-level actions, erosion and sediment-related effects would be less than significant. No mitigation is required.

5.6.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on geology, seismicity, soils, and mineral resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
GEO-1: Effects on Levee Stability	Beneficial	N/A	N/A
GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction	Less than significant	N/A	N/A
GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance	Less than significant	N/A	N/A

Effect GEO-1: Effects on Levee Stability

This effect is the same as that described under The Rivers APA, above. This effect is considered beneficial.

Effect GEO-3: Effects Resulting from Seismic Groundshaking and Liquefaction

This effect is the same as that described under The Rivers APA, above, with the exception that the structure that could potentially sustain damage is a sheet pile wall rather than a slurry cutoff wall. This effect is considered less than significant. No mitigation is required.

Effect GEO-4: Accelerated Erosion and Sedimentation Resulting from Construction-Related Ground Disturbance

This effect is the same as that described under The Rivers APA, above. This effect is considered less than significant. No mitigation is required.

Section 5.7

Transportation and Navigation—The Rivers Early Implementation Project

5.7.1 Affected Environment

This section describes the affected environment for transportation and navigation in The Rivers EIP project area, including the regulatory and environmental settings.

5.7.1.1 Terminology

The following are definitions of key traffic and transportation terms used in this section, in addition to the definitions provided in Section 3.5.1.1.

- **Annual average daily traffic (AADT)**: AADT is the total volume for the year divided by 365 days.
- **Peak Hour:** This is an estimate of the "peak hour" traffic at all points on the state highway system.
- **Back and Ahead**: Back AADT, Peak Month, and Peak Hour usually represent traffic south or west of the count location. Ahead AADT, Peak Month, and Peak Hour usually represent traffic north or east of the count location.

5.7.1.2 Regulatory Setting

5.7.1.2.1 Federal

The following Federal policies related to transportation and navigation may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.5.2.1, Regulatory Setting, for a more complete description of each policy.

- River and Harbors Appropriation Act of 1899

5.7.1.2.2 Local

The following local policies related to transportation and navigation may apply to the implementation of The Rivers EIP. Please see Section 3.5.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

5.7.1.3 Environmental Setting

This section discusses the environmental setting related to transportation and navigation in the study area for The Rivers EIP.

5.7.1.3.1 Roadways

Existing freeways within or near the project area are described below.

- **Interstate 80 (I-80)** is a major freeway that runs northeast to southwest, west of the project area. I-80 heads towards Reno to the east and San Francisco to the west. The freeway runs above the Sacramento River North Levee.
- **Highway 50 (US 50)** is a major highway that runs east to west, south of the project area. US 50 heads toward Carson City to the east and merges with I-80 on the western side of West Sacramento as it heads toward San Francisco.

Table 5.7-1 shows the Back and Ahead AADT for the highway segments that would be most affected by project-related traffic.

Table 5.7-1. AADT for Highways in The Rivers Project Area

Highway	Segment	Back AADT	Ahead AADT
I-80	Junction with Route 50	145,000	85,000
I-80	Junction with Route 84 (Reed Avenue)	85,000	90,000
I-80	West El Camino Avenue Interchange	90,000	87,000
US 50	Junction with Route 80	–	85,000
US 50	Harbor Boulevard Interchange	85,000	116,000
US 50	Junction with Route 84	116,000	109,000
US 50	Junction with Route 5	177,000	226,000

Source: California Department of Transportation 2009.

The major arterial streets that serve the study area or that may be affected by project implementation are:

- **West Capitol Avenue (SR 275)** is an east-west arterial that runs between I-80 near the western city limits of West Sacramento and the Tower Bridge at the Sacramento River. The roadway width varies between two, four, and six lanes.
- **Reed Avenue/Sacramento Avenue/C Street (SR 84)** runs east-west, between I-80 near the western city limits and the I Street Bridge at the Sacramento River, and lies 0.75 mile south of the project area. The roadway width varies between two and four lanes. Under LOS Criteria for Roadway Segments, Reed Avenue is classified as a four-lane arterial with moderate access control for the four-lane sections. Sacramento Avenue is classified as a four- and two-lane arterial with moderate access control.
- **Harbor Boulevard** is a north-south arterial that runs through the western portion of the city. The roadway width varies between two and four lanes, and has moderate access control.
- **Jefferson Boulevard (SR 84)** is a major arterial that extends from Sacramento Avenue to south of city limits. Jefferson Boulevard is a four-lane road with low access control from Sacramento Avenue to just south of South Linden Road.

Local roads that would provide access to The Rivers project area include Fifth Street, Lighthouse Drive, and River Crest Drive. Fifth Street begins near the eastern end of West Capitol Avenue and heads north to where it becomes Lighthouse Drive. Fifth Street is classified as a four-lane arterial

road with moderate access control. Lighthouse Drive starts at A Street and runs north, then curves to the west. The section of Lighthouse Drive that runs south to north is classified as a four-lane arterial road with low access control, and then becomes a two-lane residential collector road with access as it runs east to west. River Crest Drive runs along the crown of the Sacramento River North Levee, and lies within The Rivers gated community. River Crest Drive is classified as a residential road. The levee road that runs along the Sacramento River North levee crown would provide access as well; however, this road is used for maintenance purposes and has no public access. Table 5.7-2 shows the ADT, peak-hour traffic, and LOS for the major roadways in the project area.

Table 5.7-2. ADT, Peak-Hour Traffic, and LOS for Roadways in The Rivers Project Area

Street	Limits	ADT	AM Peak	PM Peak	LOS	Count Year
West Capitol Avenue	Riske Lane to 3rd Street	4,337	251	408	A	2005
Reed Avenue	Riverside Parkway to Sunset Avenue	15,930	1,036	1,229	A	2005
Sacramento Ave	Sunset Ave to Kegle Dr	10,437	995	885	A	2006
Sacramento Ave	Kegle Dr. to 6th St	9,517	541	812	A	2007
Harbor Boulevard	Rice Ave to West Capitol Ave	15,464	1,050	1,257	A	2008
Harbor Boulevard	Reed Ave to Rice Ave	15,399	869	1,195	A	2007
Harbor Boulevard	West Capitol Ave to Industrial Blvd	30,135	2,413	2,110	D	2007
Jefferson Boulevard	Sacramento Ave to West Capitol Ave	21,176	1,773	1,849	A	2006
Jefferson Boulevard	West Capitol Ave to 15th St	33,705	2,199	2,545	E	2006
5th Street	A Street to West Capitol Avenue	5,358	377	580	A	2008
Lighthouse Drive	Fountain Drive to A Street	2,890	167	149	A	2006

Source: City of West Sacramento 2007.

According to the City of West Sacramento's Level of Service standards, all roads that lie within or near the project area are of an acceptable level of service, with the exception of Harbor Boulevard (West Capitol Avenue to Industrial Boulevard) and Jefferson Boulevard (West Capitol Avenue to 15th Street).

5.7.1.3.2 Parking

On-street parking in the project area is limited to the shoulders of the local roads, including Riverbank Road, Rivercrest Road, and Fountain Drive. At the eastern end of Riverbank Road, near its terminus, there are two parking lots. One parking lot is for the Club West Teen Center, and the other is for Riverbank Elementary School. Both parking lots are only accessible via Riverbank Road. The City does not have any public parking lots in the project area. Construction projects are subject to off-street parking standards as defined in the City's Zoning Ordinance (City of West Sacramento 2000).

5.7.1.3.3 Railroads

No railroads lie within the project area. The closest railroad tracks to the project area belong to the Union Pacific Railroad, which lie approximately 0.75 mile southwest of the project area.

5.7.1.3.4 Transit Facilities

No bus lines or other transit facilities are located within the project area.

5.7.1.3.5 Bikeways

Bicycle facilities are currently available in the project vicinity. Major arterial roads as well as several minor arterial roads throughout the city have bike lanes or bike accessible shoulders. Bike accessible areas that run adjacent to or on top of levees in the project area include Riverbank Road, Rivercrest Road, and Fountain Drive (Sacramento River North Levee) (City of West Sacramento 2009a).

5.7.1.3.6 Airports

Airports in the area include Sacramento International Airport, Sacramento Executive Airport, Mather Airport, and Franklin Field. Sacramento International Airport is Sacramento County owned and is located approximately 7 miles to the north of the city, between Sacramento and Woodland along I-5. The Executive Airport is owned by Sacramento County and is located 1.5 mile to the east of the City, within the city of Sacramento. Mather Field is a military airfield located approximately 11 miles east of the City in Rancho Cordova. Franklin Field is owned by Sacramento County and is located approximately 16 miles south of the City in Elk Grove.

5.7.1.3.7 Navigation

The Sacramento River is the only permanent waterway that lies adjacent to the project area. The river flows in a generally southward direction past the Sacramento River North Levee. The river is approximately 600 feet wide where it passes the project area, however widths vary depending on water elevations. Navigation in the Sacramento River is limited to recreational watercraft because the river is too small and fluctuating water levels prevent the accommodation of large commercial vessels.

On the West Sacramento bank, within the project vicinity, there are no docks or other access points to the river for watercraft. On the city of Sacramento side, there are several private docks that belong to homeowners living on top of or adjacent to the levee. The closest access point for watercraft on the West Sacramento side of the river is the Broderick boat ramp, which is approximately a mile and a half downriver from the eastern edge of the project area.

5.7.2 Environmental Consequences

This section describes the environmental consequences relating to transportation and navigation for The Rivers EIP project area. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis, are fully described in Section 3.5.3.3, Effects and Mitigation Measures.

5.7.2.1 Assessment Methods

The proposed project would construct levee alternatives along a section of the Sacramento River North Levee. Because of the earthwork involved and the need for materials deliveries, construction would intermittently generate substantial volumes of traffic. Once the construction is completed, maintenance needs would be similar to existing conditions. Analysis of traffic effects therefore concentrated on the construction of levee alternatives.

For the purposes of analysis, the effects of these project activities were analyzed according to truck and worker trip effects on roadway operation and circulation. Haul routes for The Rivers EIP are shown on Figure 5.7-1.

The analysis used estimated construction traffic generation (expressed as average trips per day) to develop a qualitative evaluation of short-term effects on the local and regional roadway in the project vicinity. Table 5.7-3 summarizes construction-related trips anticipated for The Rivers APA and The Rivers Alternative B, which includes trips generated by trucks hauling away excavated materials, and trucks delivering construction equipment and materials. Daily truck trips required to haul away excavated spoils and import fill materials are estimated based on a typical capacity of 20 cubic yards per truck. Each truck and each work would generate two construction-related trips. A detailed list of construction equipment, construction areas, daily and total excavation, and daily and total imported material for each phase are included in the Appendix E.

The key effects were identified and evaluated based on the environmental characteristics of The Rivers EIP project area and the magnitude, intensity, and duration of activities related to the construction of this project.

Table 5.7-3. Estimated Daily Construction Traffic by Alternative and Construction Phase

Phase of Construction	Duration (Days)	Daily Exported Spoils and Imported Material (cy)	Workers per day	Estimated Maximum Daily Truck Trips	Estimated Maximum Daily Worker Trips	Maximum Total Daily Trips
PREFERRED ALTERNATIVE						
Road demolition	2	N/A	15	24	30	54
Clearing and grubbing	6	1,867	26	186	52	238
Levee degrade	27	2,152	25	216	50	266
Slope flattening	7	1,600	26	160	52	212
Slurry wall construction	21	N/A	20	2	40	42
DSM wall construction	44	N/A	17	2	34	36
Fill placement	31	2,968	36	296	72	368
Road construction	2	N/A	21	32	42	74
ALTERNATIVE B						
Road demolition	2	N/A	15	24	30	54
Clearing and grubbing	6	1,867	26	186	52	238
Slope flattening	23	2,378	30	238	60	298
Sheet pile wall construction	18	N/A	9	2	18	20
Road construction	2	N/A	21	32	42	74



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Figure 5.7-1
The Rivers EIP Haul Routes

Phase of Construction	Duration (Days)	Daily Exported Spoils and Imported Material (cy)	Workers per day	Estimated Maximum Daily Truck Trips	Estimated Maximum Daily Worker Trips	Maximum Total Daily Trips
THE RIVERS TRAIL IMPROVEMENT						
Clearing and pruning	5	0	5	0	10	10
Grading	8	0	10	0	20	20
Install pathways and signs	12	191	10	20	20	40

Source: HDR Engineering, Inc.

5.7.2.2 Determination of Effects

For this analysis, a transportation effect was considered significant if it would result in any of the following outcomes, which are based on professional practice, State CEQA Guidelines Appendix G, *City of West Sacramento General Plan Policy Document*, and the City's LOS policies:

- cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the V/C ratio on roads, or congestion at intersections);
- cause, either individually or cumulatively, exceedance of a LOS standard established by the City and/or the California Department of Transportation (Caltrans) for designated roads or highways;
- substantially alter present patterns of circulation or movement;
- substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., slow-moving vehicles);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks); or substantially impede navigation of watercraft as a result of the installation of cofferdams or the staging of barges within navigable sections of the surrounding waterways.

5.7.3 Effects and Mitigation Measures

5.7.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. Under the No Action Alternative, there would be no change in the characteristics of the regional transportation system, local roadways, or navigation in the project area. It is likely that the levee roads and other roads in the program area would continue to be maintained by the City. No road modifications, including the

raising and building of new roads, would occur, and navigation would not change under the No Action Alternative.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Transportation and Navigation program analysis (Section 3.5.3.3.1). In summary, those effects could include widespread damage to the city's utilities, roadways, railways, major interstate transportation corridors, and other infrastructure systems, interrupting emergency response services and hindering the region's and the state's abilities to move goods and people. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

5.7.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on transportation and navigation. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Significant and unavoidable	Significant and unavoidable	No feasible mitigation
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A

Effect TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic

Implementation of The Rivers APA would require hauling of construction equipment and materials to The Rivers EIP project area along major highways and over surface streets in the city (Figure 5.7-1).

The use of highways to haul construction equipment and materials to and from The Rivers EIP project area would increase daily traffic. Additionally, many of the construction-generated trips would involve slow-moving trucks, which would further affect highway traffic. However, the increase in AADT would be relatively small. With the addition of the maximum daily construction-generated traffic shown in Table 5.7-3 to the AADT counts in Table 5.7-1, the maximum increase in traffic along any of the segments would be 0.43%. This increase in AADT is not expected to

significantly degrade the operation of highways near the project area. This effect is considered less than significant.

Table 5.7-4 shows the existing ADT levels on the surface streets to be used as haul routes for The Rivers APA with the maximum daily construction-generated traffic shown in Table 5.7-3.

Table 5.7-4. Existing and Projected ADT on Haul Routes for The Rivers APA

Street	Limits	Existing ADT	Existing LOS	Max Trips/Day	ADT During Construction
West Capitol Avenue	Riske Lane to 3rd Street	4,337	A	368	4,705
Reed Avenue	Riverside Parkway to Sunset Avenue	15,930	A	368	16,298
Sacramento Ave	Sunset Ave to Kegle Dr	10,437	A	368	10,805
Sacramento Ave	Kegle Dr. to 6th St	9,517	A	368	9,885
Harbor Boulevard	Rice Ave to West Capitol Ave	15,464	A	368	15,832
Harbor Boulevard	Reed Ave to Rice Ave	15,399	A	368	15,767
Harbor Boulevard	West Capitol Ave to Industrial Blvd	30,135	D	368	30,503
Jefferson Boulevard	Sacramento Ave to West Capitol Ave	21,176	A	368	21,544
Jefferson Boulevard	West Capitol Ave to 15th St	33,705	E	368	34,073
5th Street	A Street to West Capitol Avenue	5,358	A	368	5,726
Lighthouse Drive	Fountain Drive to A Street	2,890	A	368	3,258

The construction traffic generated by The Rivers APA would temporarily increase the daily and peak hour traffic along specified routes shown in Table 5.7-4; however, traffic levels on haul route roads would return to normal levels once construction is completed. These routes would operate well within the City's LOS standard, with the exception of Jefferson Boulevard from West Capitol Avenue to 15th Street, which would maintain an LOS of E. Harbor Boulevard from West Capitol Avenue to Industrial Boulevard would have an LOS of D; however, the segment is located within 0.25 mile of a freeway interchange, which means the lower LOS is acceptable according to the City's standards. Although this addition of construction-related traffic would not be expected to degrade the LOS on most haul route roads to an unacceptable level, slow-moving heavy trucks could affect traffic flow on these roadways, particularly if numerous trips occur during the morning or afternoon peak traffic periods. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter 2, Alternatives, would reduce the effects of construction traffic on all haul routes to a less-than-significant level.

Effect TN-2: Temporary Road Closures on the Levee Crown or Roads That Run Adjacent to the Levee

Implementation of The Rivers APA would result in the temporary closure of Riverbank Road north of Bryte Park, the western section of Fountain Drive, and the western section of Rivercrest Drive. The section of Riverbank Road that is located in the project area provides access only to a parking lot at Riverbank Elementary School before it reaches a dead end, and provides no through-access to any other streets.

The temporary closure of sections of Fountain Drive and Rivercrest Road would prevent home access and parking for 15 residences. During periods of time when construction is directly adjacent to their homes, the residents would be temporarily relocated. Therefore, the temporary closure of

these roads would not result in inadequate emergency access or parking, or substantially alter present patterns of circulation as the affected residents would not be in their homes, and neighboring residential roads could be used without affecting emergency access, parking, or circulation to homes adjacent to the project area. Additionally, the closure of roads would be temporary as they would be opened upon completion of the project. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter 2, Alternatives, would aid in maintaining traffic standards during construction. However, because residents would lose daily access to their properties, this effect is considered significant and unavoidable. There is no feasible mitigation.

Effect TN-3: Temporary Restriction of Access to Parking

The temporary closure of the section of Riverbank Road north of Bryte Park would remove access to the parking lot on the northern side of Riverbank Elementary School, as well as the parking lot for the Club West Teen Center. However, the school has a parking lot on its southern side, and on-street parking is available in front of the school during periods of construction; therefore, the project would not result in inadequate parking capacity. Access to the northern parking lot would be available again after construction of the project is complete and Riverbank Road is reopened. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter 2, Alternatives, would not be needed to reduce the intensity of this effect; however, it would aid in maintaining traffic standards during construction. This effect is less than significant.

Effect TN-4: Increase in Emergency Response Times

Emergency access to The Rivers project vicinity could be affected by construction of the proposed program, and construction-related traffic could delay or obstruct the movement of emergency vehicles. However, execution of the environmental commitment to develop and implement a traffic control and road maintenance plan, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related effects on emergency response times. This effect would be less than significant.

Effect TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers

A parking area for construction workers and trucks would be provided at staging areas adjacent to a work site or areas within the levee right-of-way; therefore, this effect would be less than significant.

Effect TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures

Although most of the construction of the proposed program would take place within the project right-of-way, temporary road closures would be needed in some areas, which could interfere with transit services or bicycle travel along these roads. Implementation of the Traffic Control and Road Maintenance Plan environmental commitment, described in Section2.9 of Chapter 2, Alternatives, would minimize construction-related traffic conflicts with alternative modes of transportation. Therefore, this effect would be less than significant. No mitigation is required.

5.7.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on transportation and navigation. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic	Less than significant	N/A	N/A
TN-2: Temporary Road Closures or Restricted Access to Parking on the Levee Crown or Roads That Run Adjacent to the Levee	Significant and unavoidable	Significant and unavoidable	No feasible mitigation
TN-3: Increase in Safety Hazards Attributable to Construction-Generated Traffic	Less than significant	N/A	N/A
TN-4: Increase in Emergency Response Times	Less than significant	N/A	N/A
TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers	Less than significant	N/A	N/A
TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures	Less than significant	N/A	N/A

Effect TN-1: Temporary Increase in Traffic Volumes from Construction-Generated Traffic

Implementation of The Rivers Alternative B would require hauling of construction equipment and materials to The Rivers EIP project area along major highways and over surface streets in the city (Figure 5.7-1).

The use of highways to haul construction equipment and materials to and from The Rivers EIP project area would increase daily traffic. Additionally, many of the construction-generated trips would involve slow-moving trucks, which would further affect highway traffic. However, the increase in AADT would be relatively small. With the addition of the maximum daily construction-generated traffic shown in Table 5.7-3 to the AADT counts in Table 5.7-1, the maximum increase in traffic along any of the segments would be 0.35%. This increase in AADT is not expected to significantly degrade the operation of highways near the project area. This effect would be less than significant.

Table 5.7-5 shows the existing ADT levels on the surface streets to be used as haul routes for The Rivers Alternative B with the maximum daily construction-generated traffic shown in Table 5.7-3.

Table 5.7-5. Existing and Projected ADT on Haul Routes for The Rivers APA

Street	Limits	Existing ADT	Existing LOS	Max Trips/Day	ADT During Construction
West Capitol Avenue	Riske Lane to 3rd Street	4,337	A	298	4,635
Reed Avenue	Riverside Parkway to Sunset Avenue	15,930	A	298	16,228
Sacramento Ave	Sunset Ave to Kegle Dr	10,437	A	298	10,735
Sacramento Ave	Kegle Dr. to 6th St	9,517	A	298	9,815
Harbor Boulevard	Rice Ave to West Capitol Ave	15,464	A	298	15,762
Harbor Boulevard	Reed Ave to Rice Ave	15,399	A	298	15,697
Harbor Boulevard	West Capitol Ave to Industrial Blvd	30,135	D	298	30,433
Jefferson Boulevard	Sacramento Ave to West Capitol Ave	21,176	A	298	21,474
Jefferson Boulevard	West Capitol Ave to 15th St	33,705	E	298	34,003
5th Street	A Street to West Capitol Avenue	5,358	A	298	5,656

The construction traffic generated by The Rivers Alternative B would temporarily increase the daily and peak hour traffic along specified routes shown in Table 5.7-5: however, traffic levels on haul route roads would return to normal levels once construction is completed. These routes would operate well within the City's LOS standard, with the exception of Jefferson Boulevard from West Capitol Avenue to 15th Street, which would maintain an LOS of E. Harbor Boulevard from West Capitol Avenue to Industrial Boulevard would have an LOS of D; however, the segment is located within 0.25 mile of a freeway interchange, which means the lower LOS is acceptable according to the City's standards. Although this addition of construction-related traffic would not be expected to degrade the LOS on most haul route roads to an unacceptable level, slow-moving heavy trucks could affect traffic flow on these roadways, particularly if numerous trips occur during the morning or afternoon peak traffic periods. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter 2, Alternatives, would reduce the effects of construction traffic on all haul routes to a less-than-significant level.

Effect TN-2: Temporary Road Closures on the Levee Crown or Roads That Run Adjacent to the Levee

Implementation of The Rivers Alternative B would result in the temporary closure of Riverbank Road north of Bryte Park, the western section of Fountain Drive, and the western section of Rivercrest Drive. The section of Riverbank Road that is located in the project area provides access only to a parking lot at Riverbank Elementary School before it reaches a dead end, and provides no through-access to any other streets.

The temporary closure of sections of Fountain Drive and Rivercrest Road would prevent home access and parking for approximately 15 residences. During periods of time when construction is directly adjacent to their homes, the residents would be temporarily relocated. Therefore, the temporary closure of these roads would not result in inadequate emergency access or parking, or substantially alter present patterns of circulation as the affected residents would not be in their homes, and neighboring residential roads could be used without affecting emergency access, parking, or circulation to homes adjacent to the project area. Additionally, the closure of roads would only be temporary as they would be opened upon completion of the project. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter

2, Alternatives, would aid in maintaining traffic standards during construction. However, because residents would lose daily access to their properties, this effect is considered significant and unavoidable. There is no feasible mitigation.

Effect TN-3: Temporary Restriction of Access to Parking

The temporary closure of the section of Riverbank Road north of Bryte Park would remove access to the parking lot on the northern side of Riverbank Elementary School, as well as the parking lot for the Club West Teen Center. However, the school has a parking lot on its southern side, and on-street parking is available in front of the school during periods of construction; therefore, the project would not result in inadequate parking capacity. Access to the northern parking lot would be available again after construction of the project is complete and Riverbank Road is reopened. Implementation of the traffic control and road maintenance plan environmental commitment, described in Chapter 2, Alternatives, would not be needed to reduce the intensity of this effect; however, it would aid in maintaining traffic standards during construction. This effect is less than significant. No mitigation is necessary.

Effect TN-4: Increase in Emergency Response Times

This effect is the same as that described under The Rivers APA, above. This effect is considered less than significant. No mitigation is required.

Effect TN-5: Inadequate Parking Supply to Meet Parking Demand for Construction Equipment and Construction Workers

This effect is the same as that described under The Rivers APA, above. This effect is considered less than significant. No mitigation is required.

Effect TN-6: Disruption of Alternative Transportation Modes as a Result of Temporary Road Closures

This effect is the same as that described under The Rivers APA, above. This effect is considered less than significant. No mitigation is required.

Section 5.8

Air Quality and Climate Change—The Rivers Early Implementation Project

5.8.1 Affected Environment

This section describes the affected environment for air quality and climate change in The Rivers EIP project area, including the regulatory and environmental settings.

5.8.1.1 Air Quality Regulatory Setting

5.8.1.1.1 Federal

The following Federal policies related to air quality and climate change may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.6.2.1, Regulatory Setting, for a more complete description of each policy.

- Clean Air Act
- General Conformity Regulation
- Federal Tailpipe Emission Standards

5.8.1.1.2 State

The following state policies or agencies related to air quality and climate change may apply to the implementation of The Rivers EIP. Please see Section 3.6.2.1, Regulatory Setting, for a more complete description of each policy.

- California Clean Air Act
- Idling Limit Regulation
- Airborne Toxic Control Measure
- State Tailpipe Emission Standards
- State NO_X Reduction Program

5.8.1.1.3 Local

The following state policies or agencies related to air quality and climate change may apply to the implementation of The Rivers EIP. Please see Section 3.6.2.1, Regulatory Setting, for a more complete description of each policy.

- Yolo-Solano Air Quality Management District
- Sacramento Metropolitan Air Quality Management District

5.8.1.2 Climate Change Regulatory Setting

5.8.1.2.1 Federal

The following Federal policies related to climate change may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.6.2.2, Climate Change Regulatory Setting, for a more complete description of each policy.

- Mandatory Greenhouse Gas Reporting Rule
- Environmental Protection Agency Endangerment cause and Contribute Findings

5.8.1.2.2 State

The following state policies or agencies related to climate change may apply to the implementation of The Rivers EIP. Please see Section 3.6.2.2, Climate Change Regulatory Setting, for a more complete description of each policy.

- Executive Order S-3-05
- Assembly Bill 32, California Climate Solutions Act of 2006
- Senate Bill 97
- Actions Taken by California Attorney General's Office
- California Air Pollution Control Officers Association Guidance
- Executive Order S-13-08

5.8.1.3 Air Quality Environmental Setting

The environmental setting for The Rivers EIP is described in the Program Area Affected Environment. The following provides a summary of air quality and climate change information relevant to climate change and air quality in The Rivers EIP project area.

5.8.1.3.1 Study Area

The study area is in Yolo County, which is located in the Sacramento Valley Air Basin (SVAB). The SVAB includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and parts of Solano and Placer Counties. The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada, and on the west by the Coast Range.

5.8.1.3.2 Background Information on Air Pollutants

Air quality studies generally focus on five pollutants most commonly measured and regulated, and referred to as criteria air pollutants: ozone, CO, inhalable PM (PM10 and PM2.5), NO_2, and SO_2. Because ozone, a photochemical oxidant, is not emitted into the air directly from sources, emissions of ozone precursors, including NO_X and ROG, are regulated with the aim of reducing ozone formation in the lowermost region of the troposphere.

Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale: NO_2 reacts photochemically with ROG to form ozone, and this reaction

occurs at some distance downwind of the source of pollutants. Pollutants such as CO, PM10, and PM2.5 are considered to be local pollutants because they tend to disperse rapidly with distance from the source.

The principal characteristics surrounding these pollutants and TACs and GHGs are discussed in Section 3.6.2.2.2, Background Information on Air Pollutants.

5.8.1.3.3 Air Quality Attainment Status

The air quality attainment status for criteria pollutants in Yolo County and Sacramento County are summarized in Table 5.8-1. Areas are classified as in attainment or in non-attainment with respect to CAAQS and NAAQS. These classifications are made by comparing actual monitored air pollutant concentrations to state and Federal standards. If a pollutant concentration is lower than the state or Federal standard, the area is considered to be in attainment of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a non-attainment area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated as unclassified. This typically occurs in non-urbanized areas, where pollutant levels may be less closely monitored.

On December 22, 2008, EPA classified Yolo County as a partial non-attainment area for the PM2.5 standard. With the new designation, an attainment plan will be submitted to EPA by 2012.

Table 5.8-1. Yolo County and Sacramento County Air Quality Attainment Status

Pollutant	Averaging Time	State Standards	National Standards
Yolo County			
Ozone	1-Hour	Serious Non-attainment	No Designation
	8-Hour	Non-attainment	Serious Non-attainment
CO		Attainment	Attainment
PM10	24-Hour	Non-attainment	Unclassified
PM2.5	24-Hour	Unclassified	Partial Non-attainment
Sacramento County			
Ozone	1-Hour	Serious Non-attainment	No Designation
	8-Hour	Non-attainment	Serious Non-attainment
CO		Attainment	Attainment
PM10	24-Hour	Non-attainment	Moderate Non-attainment
PM2.5	24-Hour	Non-attainment	Unclassified/Attainment

Source: California Air Resources Board 2009c.

5.8.1.3.4 Sensitive Receptors

Sensitive land uses in the vicinity of The Rivers EIP project area are primarily single-family residential, schools (e.g., Riverbank Elementary School), and public parks (e.g. Bryte Park). Single-family homes are located on Todhunter Avenue adjacent to the southwest corner of the project area, and on Rivercrest Drive and Fountain Drive adjacent to the eastern portion of the project area. Bryte Park and the playground of Riverbank Elementary School are located within 500 feet of the project area.

There are approximately 30 to 40 residences within the immediate vicinity of construction activities. At times, construction activities would be directly adjacent to their homes. As described in Chapter 2, Alternatives, WSAFCA will provide assistance for residents to relocate during construction activities and will provide compensation to residents for reasonable rent and living expenses incurred due to relocation, as the project commitments.

5.8.1.4 Climate Change Environmental Setting

The environmental setting for The Rivers EIP is described in the Program Area Affected Environment. The following provides a summary of climate change information relevant to the proposed Rivers EIP project areas.

5.8.1.4.1 Background Information on Climate Change

GHGs are any gasses that absorb infrared radiation in the atmosphere. Increases in these gasses lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the global climate change. The most common GHG is CO_2, which constitutes approximately 84% of all emissions of GHG in California. GHG are global pollutants, unlike criteria air pollutants (such as ozone precursors) and TACs, which are pollutants of regional and local concern.

5.8.1.4.2 California Climate Trends

Maximum (daytime) and minimum (nighttime) temperatures are increasing almost everywhere in California but at different rates. The annual minimum temperature averaged over all of California increased 0.33°Fper decade from 1920 to 2003, while the average annual maximum temperature increased 0.1°F per decade (Moser et al. 2009). At the same time the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote et al. 2005, Knowles 2006). These changes have significant implications for water supply, flooding, aquatic ecosystems, energy generation, and recreation throughout the state.

5.8.2 Air Quality Environmental Consequences

This section describes the environmental consequences relating to air quality and climate change for the proposed Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis described in Section 3.6.3.3, Effects and Mitigation Measures. Project-specific discussion is provided below the summary table if there are unique aspects to the project footprint, characteristics, or other manifestations of a program effect specific to The Rivers EIP.

5.8.2.1 Air Quality Assessment Methods

To assist in the determination of effects, various quantitative models are available to predict emissions and particulate matter generation. Two such models are URBEMIS and SacRCEM. While SacRCEM has typically been used for other recent levee improvement projects in the Sacramento

Valley, both models have been applied to simulate the project-level air quality effects of the WSLIP. Given the similarity in the architecture of the two models, for ROG, NO_X, and CO_2, the outputs from the two models are very similar and any variance is considered not statistically significant. For PM, the URBEMIS outputs are considered more conservative (meaning the production values are higher) based on the model's internal methods and assumptions for treatment of earthwork. As the project proponent, WSAFCA has selected this more conservative approach to not under-predict potential project effects. URBEMIS further allows application of mitigation measures to fine-tune and predict quantitative effectiveness of available measures and assist in determining post-mitigation findings. For these reasons, WSAFCA has selected to use the results of URBEMIS for quantitative determination of effects, effect findings, and mitigation efficacy. The results of both models for the WSLIP EIPs are in Appendix E.

Construction-related emissions were estimated using URBEMIS 2007 model (Version 9.2.4), which uses EPA, CARB, and air district emissions factors to estimate emissions from construction activities. Construction emissions (tailpipe emissions and fugitive dust) were modeled using the conceptual construction schedule, phases, and equipment usage based on the most current available project design information.

5.8.2.2 Air Quality Determination of Effects

For this analysis, an effect pertaining to air quality was analyzed based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.). An effect was considered significant if it would:

- conflict with, or obstruct implementation of, the applicable air quality plan;
- violate any air quality standard or substantial contribution to existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area under NAAQS and CAAQS;
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

The appropriate district-recommended emission thresholds as published in their respective CEQA guidance documents also apply to individual projects under their jurisdiction. An air quality effect is considered to be significant if the project's construction emissions would exceed the General Conformity thresholds. For construction and operational activities that occur in Yolo County, an air quality effect is considered to be significant if the air pollutant emissions would exceed YSAQMD's thresholds of significance as shown in Table 3.6-2 (see Section 3.6.2.1, Regulatory Setting). For portions of the construction activities that would occur in Sacramento County, an air quality effect is considered to be significant if the air pollutant emissions would exceed SMAQMD's thresholds of significance as shown in Table 3.6-3 (see Section 3.6.2.1, Regulatory Setting).

5.8.3 Air Quality Effects and Mitigation Measures

5.8.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. Current levee operations and maintenance activities would continue, but there would be no construction-related emissions from program implementation or maintenance.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to under-seepage, slope stability, or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Air Quality program analysis (Section 3.6.3.3.1). In summary, those effects on air quality could include emission of pollutants in excess of air quality standards, increase in GHG emission, and exposure of sensitive receptors to toxic air emissions as a result of flood-fighting activities. These effects could occur for days, weeks or even months. These effects could be considered significant; however, the timing, duration, and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

5.8.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the effects on air quality as outlined in the summary table provided after construction phases and duration information on air quality. A description of these effects is provided below the summary table.

Construction phases, duration, and activities for The Rivers APA are listed in Table 5.8-2. As described in Chapter 2, Alternatives, construction of the proposed project is anticipated to take place in 2011 and would be completed during the typical construction season. For the air quality impact analysis, it is assumed that the construction work for each section would occur progressively by phases. For each construction phase, construction equipment uses at the site, exported spoils, and imported materials are provided by the project engineers and summarized in Table 5.8-2. Detailed operation hours and horsepower ratings of construction equipment used for each construction phase, and URBEMIS model results are included in the Appendix E.

Table 5.8-2. Construction Phases, Activities, Schedule, and Equipment: The Rivers APA

Phase	Duration (days)	Area (acres)	Excavated Spoils (cy)	Import Material (cy)	Construction Equipment
Flood Control Alternative					
Road demolition	2	0.6	1,000	–	6 dump trucks, 1 loader, 2 bulldozers, 1 excavator
Clearing and grubbing	6	6.9	11,200	–	18 dump trucks, 2 bulldozers, 1 excavator
Levee degrade	27	6	58,100	–	18 dump trucks, 1 bulldozer, 1 excavator
Slope flattening	7	6.9	–	11,200	14 dump trucks, 2 bulldozers, 2 excavators, 1 compactor, 1 maintainer, 1 water truck

Phase	Duration (days)	Area (acres)	Excavated Spoils (cy)	Import Material (cy)	Construction Equipment
Slurry wall construction	21	–	12,333	500	1 dump truck, 9 delivery trucks, 1 loader, 2 bulldozers, 1 long reach track hoe, 1 rough terrain forklift
DSM wall construction	44	–	–	1,000	9 delivery trucks, 1 loader, 1 crane with augers, 1 rough terrain forklift
Fill placement	31	6.9	–	92,000	22 dump trucks, 4 bulldozers, 1 excavator, 2 compactors, 1 maintainer, 1 water truck
Road construction	2	0.6	–	1,000	8 dump trucks, 1 skip loader, 1 blade, 1 sheepsfoot compactor, 1 pneumatic compactor, 1 roller compactor, 1 distributor, 1 asphalt paver, 1 water truck
Recreation Alternative					
Clear and pruning	5	1.2	–	–	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck
Grading	8	2.4	–	–	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck
Install pathways and signs	12	1.6	–	2,300	1 dump truck, 1 asphalt paver, 1 asphalt sealer, 1 striping truck, 1 small front loader, 1 skid steer loader, 1 small roller

cy = cubic yards.

Based on the construction activities described above, construction-related emissions were estimated using the URBEMIS 2007 model. It is anticipated that on-site equipment operations would generate the highest daily diesel exhaust and site earthmoving activities would result in the highest daily fugitive dust generation. The estimated construction emissions are shown in Table 5.8-3. To comply with YSAQMD, SMAQMD, and General Conformity thresholds, annual emissions are estimated for ROG, NO_X, CO, PM10, and PM2.5 and the maximum daily emission is estimated for NO_X and PM10. Detailed construction emissions for each construction phase are summarized in the Appendix E.

As described in Chapter 2, Alternatives, in order to complete the project before the flood season, the contractors would be allowed to construct on a 24/7 work schedule. Depending on the daily construction activities, the 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the estimated emissions shown in Table 5.8-3, which are based on the standard construction schedule (10 hours per day and 5 days per week). The annual emissions for ROG, NO_X, CO, PM10, and PM2.5 would be the same for both the standard schedule and the 24/7 schedule because the project would be completed in 2011 under either schedule.

Table 5.8-3. Estimated Construction Emissions: The Rivers APA

Construction Emissions	ROG (tons/year)	NO_X (lbs/day)	NO_X (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project Construction without Mitigations								
Project-wide								
Maximum daily emissions	–	494	–	–	372	–	–	–
Total annual Emissions	1.6	–	15.4	5.7	–	12.4	3.0	1,786
Within YSAQMD								
Maximum daily emissions	–	448	–	–	370	–	–	–
Total annual Emissions	1.5	–	14	5	–	12.3	3	1,589
Within SMAQMD								
Maximum daily emissions	–	47	–	–	2	–	–	–
Total annual Emissions	0.1	–	1.4	0.7	–	0.1	0.1	197
Project Construction with Mitigations								
Project-wide								
Maximum daily emissions	–	325	–	–	46	–	–	–
Total annual emissions	1.6	–	10.1	5.7	–	2.2	0.6	1,786
Within YSAQMD								
Maximum daily emissions	–	278	–	–	44	–	–	–
Total annual Emissions	1.5	–	8.7	5	–	2.1	0.6	1,589
Within SMAQMD								
Maximum daily emissions	–	47	–	–	2	–	–	–
Total annual Emissions	0.1	–	1.4	0.7	–	0.1	0.1	197
Construction Thresholds								
Federal General Conformity (Project-wide emissions)	50	–	50	–	–	100	100	–
YSAQMD (Emissions in YSAQMD)	10		10	–	80		–	–
SMAQMD (Emissions in SMAQMD)	–	85	–	–	–	–	–	–

Effect	Finding	With Mitigation	Mitigation Measure
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	Less than significant to significant and unavoidable	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 and PM2.5 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A

Effect AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan

A program or project is deemed inconsistent with an air quality plan if it would result in population or employment growth that exceeds the growth estimates in the applicable air quality plan—thus generating emissions not accounted for in the applicable air quality plan emissions budget. Consequently, proposed programs need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rate included in the relevant air quality plan.

As described in Chapter 6, Growth-Inducing and Cumulative Effects, the implementation of the program might remove an obstacle for undeveloped lands in West Sacramento and make development easier or more attractive for these lands, which might result in population growth in these areas in the long term. The City is currently in the process of updating its 1994 General Plan. It is expected that the new General Plan will include the land use changes in these areas. Additionally, the 2035 Metropolitan Transportation Plan (Sacramento Area Council of Government 2008) has included the population projection of 278,786 people for Yolo County and 87,402 people for West Sacramento, which has accounted for the land development and population growth of these areas through 2035. The air quality conformity analysis as part of the 2035 Metropolitan Transportation Plan meets the emission conformity test for the Sacramento ozone non-attainment area. Therefore, the program would not conflict with or obstruct the implementation of air quality plans. This effect would be less than significant. No mitigation is required.

Effect-AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds

Without mitigation, construction-related emissions under The Rivers APA would exceed YSAQMD's emission thresholds for NO_X and PM10 and would result in a significant effect. Mitigation measures for this effect are AQ-MM-1 to AQ-MM-3, described below. Table 5.8-3 shows the mitigated NO_X and PM10 emissions with these mitigation measures. After mitigation, the NO_X and PM10 emissions would be less than YSAQMD's significance thresholds.

The 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the standard schedule, depending on the daily construction activities. The implementation of AQ-MM-2, which includes all applicable and feasible fugitive dust control measures required by YSAQMD, will reduce PM10 emissions below the YSAQMD's significance threshold. The implementation of AQ-MM-4, which includes the NO_X mitigation fee required by the SMAQMD, would reduce NO_X emissions below the SMAQMD's significance threshold.

It is possible the CHP Academy EIP could be constructed simultaneously with The Rivers EIP, Depending on whether APA or Alternative B for each project is constructed at the same time, it is possible the combined emissions from the simultaneous projects could exceed the annual average YSCAQMD threshold for NOx and/or the maximum-daily SMAQMD threshold for NO_X. In either case, mitigation measure AQ-MM-1 would be implemented. SMAQMD's requirement for NO_X offset purchases would reduce the impact in Sacramento County to less than significant. However, YSAQMD does not require purchase of offsets, so after implementation of the mitigation measure the impact of simultaneous projects could still be significant and unavoidable in Yolo County.

Mitigation Measures

Mitigation Measure AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds

Unmitigated NO_X and ROG emissions from construction equipment tailpipes could potentially exceed the YSAQMD CEQA thresholds. Therefore, WSAFCA will require the construction contractor to implement feasible and reasonable measures to reduce public nuisance and tailpipe emissions from diesel-powered construction equipment. This requirement will be incorporated into the construction contracts.

Depending on the exceedance amounts of NO_X and ROG emissions, the WSAFCA will require the construction contractor to implement either or both of the following mitigation options.

Mitigation Measure AQ-MM-1a

According to the YSAQMD guidelines (Yolo-Solano Air Quality Management District 2007), the project lead agency is encouraged to explore and incorporate mitigation measures as technology advances and less emissive products become available at lower costs.

The measures recommended by the YSAQMD are listed below.

- Reduce use, trips, and unnecessary idling of heavy equipment. Shut down idling equipment that is not used for more than 5 consecutive minutes as required by California law.
- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Use a modern equipment fleet meeting CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.

- Install emission control devices on older equipment to reduce CO, ROG, and NO_X emissions to levels equivalent to CARB's 1996 or newer certification standard.
- Locate stationary diesel-powered equipment and haul truck staging areas as far as practicable from sensitive receptors.
- Use existing power sources (e.g., power lines) or clean fuel generators rather than conventional diesel generators, when feasible
- Substitute gasoline-powered for diesel-powered equipment when feasible.
- Use reformulated and emulsified diesel fuels where feasible.
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Use aqueous diesel fuel where feasible.
- Use CARB and/or EPA-verified particulate traps and other appropriate controls (i.e., diesel oxidation catalyst or diesel particular filters) where feasible to reduce emissions of NO_X, DPM, and other pollutants at the construction site.

Mitigation Measure AQ-MM-1b

In addition to above measures, the construction contractor could provide a plan, for approval by WSAFCA and YSAQMD, demonstrating that the heavy-duty off-road equipment to be used at the project sites, including owned, leased, and subcontractor equipment, will achieve a project-wide fleet-average reduction of 20% for NO_X and 45% for diesel particulate, compared to the most recent CARB fleet average at time of construction. A construction mitigation calculator may be downloaded from the SMAQMD web site to perform the fleet average evaluation (Sacramento Metropolitan Air Quality Management District 2009).

Mitigation Measure AQ-MM-2: Implement Fugitive Dust Control Plan if Unmitigated Emissions Exceed PM10 and PM2.5 Thresholds

The construction contractor will implement all applicable and feasible fugitive dust control measures required by YSAQMD including those listed below. This requirement will be incorporated into the construction contract.

- Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person would respond and take corrective action within 48 hours. The phone number of YSAQMD also will be visible to ensure compliance with the YSAQMD Rule 2.5, Nuisance.
- Water active unpaved areas at all construction sites at least twice daily in dry conditions, with the frequency of watering based on the type of operation, soil, and wind exposure.
- Prohibit all grading activities and water all areas of disturbed soil under windy conditions (winds more than 20 miles per hour).
- Limit on-site vehicles to a speed that prevents visible dust emissions to extend beyond unpaved roads.
- Cover all trucks hauling dirt, sand, or loose materials.
- Cover active and inactive storage piles where appropriate.

- Cover or hydroseed unpaved areas that will remain inactive for extended periods.
- Apply soil stabilizers to active and inactive areas where appropriate.
- Install wheel washers at the entrance to construction sites for all exiting trucks.
- Sweep streets if visible soil material is carried out from the construction site.
- Install wind fencing and phase grading operations where appropriate.

Fugitive dust emissions from the construction of the project would be reduced to a less-than-significant level with the implementation of above mitigation.

Mitigation Measure AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents

WSAFCA will provide advance written notification of the proposed construction activities to all residences and other air quality-sensitive uses within 500 feet of the construction site. Notification will include a brief overview of the proposed project and its purpose, as well as the proposed construction activities and schedule. It will also include the name and contact information of WSAFCA's project manager or a representative for ensuring that reasonable measures are implemented to address the problem.

Mitigation Measure AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions

It is possible that on-road construction emissions, for vehicles traveling within the Sacramento County, could exceed the SMAQMD NO_X threshold. If on-road construction emissions exceed SMAQMD threshold levels, WSAFCA will be required to pay an offsite mitigation fee. Prior to the approval of project plans or the issuance of grading permits, the WSAFCA will submit proof that the offsite air quality mitigation fee of $16,000 per ton of NO_X has been paid to SMAQMD and that the construction air quality mitigation plan has been approved by SMAQMD and the lead agency. SMAQMD already has enacted a well-defined program to use NO_X offset fees received from applicants to fund regional NO_X emission reduction projects. Therefore, with the implementation of this mitigation, the air quality impact to SMAQMD would be reduced to a less-than-significant level.

Effect AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10

After the proposed alternatives are constructed, the program facilities will be generally maintained as needed. Maintenance work would be less extensive and would take place over a few days per year. In addition, maintenance and operational activities are part of the existing environmental baseline and thus would not create a substantial source of new emissions. This effect would be less than significant.

Effect AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions

Construction of the proposed alternatives would result in short-term diesel exhaust emissions from on-site heavy duty equipment. Particulate exhaust emissions from diesel-fueled engines (DPM) were identified as a TAC by CARB in 1998. Construction of alternatives would result in the generation of DPM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities.

The assessment of health risks associated with exposure to diesel exhaust typically is associated with chronic exposure, in which a 70-year exposure period is often assumed. However, while cancer can result from exposure periods of less than 70 years, acute exposure periods (i.e., exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in an increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposures periods that are chronic. Construction of the program is not expected to take place at the same construction site for more than 1 to 2 years and would be expected to use a limited number of pieces of heavy equipment at the same construction site.

Furthermore, as required by CARB regulation, no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. In addition, implementation of Mitigation Measure AQ-MM-1 would further reduce exhaust emissions during construction. With implementation of mitigation measures and best management practices, the effect would be reduced to less than significant and no further mitigation is required.

Effect AQ-5: Exposure to Objectionable Odors from Diesel Exhaust

The program implementation would not result in any major sources of odor, and the program would not involve operation of any of the common types of facilities that are known to produce odors (e.g., landfill, wastewater treatment facility). In addition, odors associated with diesel exhaust from the use of on-site construction equipment would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.

Furthermore, as required by CARB regulation, no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. Implementation of Mitigation Measures AQ-MM-1 and AQ-MM-3 would further reduce exhaust emissions during construction. This effect would be less than significant.

5.8.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the effects on air quality as outlined in the summary table provided after construction phases and duration information on air quality. A description of these effects is provided below the summary table.

Table 5.8-4 summarizes the construction phases, duration, and activities for The Rivers Alternative B. As described in Chapter 2, Alternatives, construction of the proposed project is anticipated to take place in 2011 and would be completed during the typical construction season (April 15 to November 1). Construction work would be conducted on the land side; no in-water and nearshore work is anticipated. For the air quality impact analysis, it is assumed that the construction work for each section would occur progressively by phases. For each construction phase, construction equipment uses at the site, exported spoils, and imported materials are provided by the project engineers and summarized in Table 5.8-4. Detailed operation hours and horsepower ratings of construction equipment used for each construction phase are included in Appendix E.

Table 5.8-4. Construction Phases, Activities, Schedule, and Equipment: The Rivers Alternative B

Phase	Duration (days)	Area (acres)	Excavated Spoils (cy)	Import Material (cy)	Construction Equipment
Flood Control Alternative					
Road demolition	2	0.6	1,000	–	6 dump trucks, 1 loader, 2 bulldozers, 1 excavator
Clearing and grubbing	6	6.9	11,200	–	18 dump trucks, 2 bulldozers, 1 excavator
Slope flattening	23	6.9	–	54,700	18 dump trucks, 2 bulldozers, 2 excavators, 1 compactor, 1 maintainer, 1 water truck
Sheet pile wall construction	18	–	–	200	1 long bed truck, 2 cranes, 1 impact hammer
Road construction	2	0.6	–	1,000	8 dump trucks, 1 skip loader, 1 blade, 1 sheepsfoot compactor, 1 pneumatic compactor, 1 roller compactor, 1 distributor, 1 asphalt paver, 1 water truck
Recreation Alternative					
Clear and pruning	5	1.2	–	–	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck
Grading	8	2.4	–	–	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck
Install pathways and signs	12	1.6	–	2,300	1 dump truck, 1 asphalt paver, 1 asphalt sealer, 1 striping truck, 1 small front loader, 1 skid steer loader, 1 small roller

cy = cubic yards.

Based on the construction activities described above, construction-related emissions were estimated using the URBEMIS 2007 model. The estimated construction emissions are shown in Table 5.8-5. Detailed construction emissions for each construction phase are summarized in Appendix E.

As described in Chapter 2, Alternatives, in order to complete the project before the flood season, the contractors would be allow to construct on a 24/7 work schedule. Depending on the daily construction activities, the 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the estimated emissions shown in Table 5.8-5, which are based on the standard construction schedule (10 hours per day and 5 days per week). The annual emissions for ROG, NO_X, CO, PM10, and PM2.5 would be the same for both the standard schedule and the 24/7 schedule because the project would be completed in 2011 under either schedule.

Table 5.8-5. Estimated Construction Emissions: The Rivers Alternative B

Construction Emissions	ROG (tons/year)	NO_X (lbs/day)	NO_X (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project Construction without Mitigations								
Project-wide								
Maximum daily emissions	–	369	–	–	298	–	–	–
Total annual Emissions	0.6	–	6	2.3	–	5	1.2	702
Within YSAQMD								
Maximum daily emissions	–	332	–	–	296	–	–	–
Total annual Emissions	0.6	–	5.4	2	–	4.9	1.2	619
Within SMAQMD								
Maximum daily emissions	–	37	–	–	2	–	–	–
Total annual Emissions	0	–	0.6	0.3	–	0.1	0	84
Project Construction with Mitigations								
Project-wide								
Maximum daily emissions	–	369	–	–	298	–	–	–
Total annual emissions	0.6	–	6	2.3	–	5	1.2	702
Within YSAQMD								
Maximum daily emissions	–	332	–	–	296	–	–	–
Total annual Emissions	0.6	–	5.4	2	–	4.9	1.2	619
Within SMAQMD								
Maximum daily emissions	–	37	–	–	2	–	–	–
Total annual Emissions	0	–	0.6	0.3	–	0.1	0	84
Construction Thresholds								
Federal General Conformity (Project-wide emissions)	50	–	50	–	–	100	100	–
YSAQMD (Emissions in YSAQMD)	10		10	–	80		–	–
SMAQMD (Emissions in SMAQMD)	–	85	–	–	–	–	–	–

Effect	Finding	With Mitigation	Mitigation Measure
AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan	Less than significant	N/A	N/A
AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds	Significant	Less than significant to significant and unavoidable	AQ-MM-1: Implement Measures to Reduce Exhaust Emissions of NO_X and ROG if Unmitigated Emissions Exceed NO_X and ROG Thresholds AQ-MM-2: Implement Fugitive Dust Control Plan If Unmitigated Emissions Exceed PM10 Thresholds AQ-MM-3: Provide Advance Notification of Construction Schedule and 24-Hour Hotline to Residents AQ-MM-4: Pay Required Fees to the SMAQMD to Offset NO_X Emissions
AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10	Less than significant	N/A	N/A
AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions	Less than significant	N/A	N/A
AQ-5: Exposure to Objectionable Odors from Diesel Exhaust	Less than significant	N/A	N/A

Effect AQ-1: Conflict with or Obstruct an Applicable Air Quality Plan

This effect is the same as described above under The Rivers APA. The effect is considered less than significant. No mitigation is required.

Effect AQ-2: Increase in Construction Emissions to Exceed Applicable Thresholds

Without mitigation, construction-related emissions under the proposed project may exceed YSAQMD's emission threshold for PM10 and would result in a significant effect. Mitigation measures for this effect are AQ-MM-2 and AQ-MM-3, described above under The Rivers APA. Table 5.8-5 shows the mitigated PM10 emissions with the above fugitive dust control measures. After mitigation, the controlled PM10 emissions would be less than YSAQMD's 80 pounds/day significance threshold.

The 24/7 work schedule could result in higher daily NO_X and PM10 emissions than the standard schedule, depending on the daily construction activities. The implementation of AQ-MM-2, which includes all applicable and feasible fugitive dust control measures required by YSAQMD, will reduce PM10 emissions below the YSAQMD's significance threshold. This effect would be less than significant. The implementation of AQ-MM-4, described above under The Rivers APA, which includes the NO_X mitigation fee required by the SMAQMD, would reduce NO_X emissions below the SMAQMD's significance threshold.

It is possible the CHP Academy EIP could be constructed simultaneously with The Rivers EIP. Depending on whether APA or Alternative B for each project is constructed at the same time, it is

possible the combined emissions from the simultaneous projects could exceed the annual average YSCAQMD threshold for NO_X and/or the maximum-daily SMAQMD threshold for NO_X. In either case, mitigation measure AQ-MM-1 would be implemented. SMAQMD's requirement for NO_X offset purchases would reduce the impact in Sacramento County to less than significant. However, YSAQMD does not require purchase of offsets, so after implementation of the mitigation measure the impact of simultaneous projects could still be significant and unavoidable in Yolo County.

Effect AQ-3: Long-Term Operation and Maintenance Emissions of ROG, NO_X, and PM10

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Effect AQ-4: Exposure of Sensitive Receptors to Toxic Air Emissions

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Effect AQ-5: Exposure to Objectionable Odors from Diesel Exhaust

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

5.8.4 Climate Change Environmental Consequences

This section describes the environmental consequences relating to climate change for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section3.6.3.6, Effects and Mitigation Measures.

5.8.4.1 Climate Change Assessment Methods

Almost all increased GHG emissions associated with the proposed project would be generated by construction-related activities. Therefore, the focus of the GHG analysis is to evaluate construction-related emissions. The principal source of GHG associated with would be temporary tailpipe emissions from construction equipment and haul trucks; the principal GHG produced would be CO_2. No air district in California, including YSAQMD, has formally adopted a significant threshold for analyzing GHG or CO_2 emissions generated by a proposed project or a methodology for analyzing air quality effects related to global warming. However, CARB and the major air quality agencies in the state (BAAQMD, SCAQMD, and SJVAPCD) have published draft thresholds for defining the significance of GHG emissions from construction projects and operational projects. Those draft thresholds and mitigation measures were utilized in the analysis of effects related to climate change.

To assist in the determination of effects, various quantitative models are available to predict emissions; URBEMIS and SacREM. As described in Section 3.6.3.1, Air Quality Assessment Methods,

those two models were utilized for quantitative determination of effects, effect findings, and mitigation efficacy.

5.8.4.2 Climate Change Determination of Effects

For this analysis, an effect pertaining to air quality was analyzed based on professional practice, draft NEPA Guidance published by CEQ, and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.). An effect was considered significant if it would:

- generate GHG emission that may have a significant impact on the environment, or
- conflict with an applicable plan adopted for the purpose of reducing GHG emissions.

5.8.5 Climate Change Effects and Mitigation Measures

5.8.5.1 No Action Alternative

The No Action Alternative is the same as that described above in Section 5.8.3.1, Air Quality No Action Alternative.

5.8.5.2 The Rivers Applicant Preferred Alternative

Implementation of The River APA would result in the following effects on climate change as outlined in the summary table provided. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A

Effect CC-1: Increase in Greenhouse Gas Emissions during Construction

Both SMAQMD and YSAQMD have not formally adopted GHG thresholds for projects such as The Rivers EIP. Therefore, a presumptive threshold of 7,000 metric tons (the lowest threshold of any formally adopted GHG threshold) is compared against the CO_2 emissions for The Rivers APA. As noted in Table 5.8-3, the CO_2 emissions project-wide without mitigation would be 1,786 metric tons per year. Within YSAQMD and SMAQMD, respectively, CO_2 emissions without mitigation would be 1,589 and 197 metric tons per year. These emissions are well below the presumptive threshold and the effects of GHG emissions during construction are considered less than significant.

Effect CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The Rivers APA does not pose any apparent conflict with the goals of AB 32, the key elements and GHG reduction measures in the Climate Change Scoping Plan, or any other plans for reduction or mitigation of GHGs. To date, no federal, state, or local agency with jurisdiction over the proposed project has adopted plans or regulations that set specific goals for emission limits or emission reductions applicable to the proposed levee improvement project. As described in Effect CC-1, the average forecast emissions from the implementation of the proposed project were compared to conservatively low presumptive significance thresholds that were derived from the draft GHG guidelines published by several local air quality agencies. The forecast emission rates are well below the presumptive significant threshold. Therefore, the proposed project would not conflict with or obstruct the implementation of greenhouse gas emission reduction plans. This effect is less than significant.

Effect AQ-8: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change

Global climate change could affect the hydrology of the Sacramento River, including the frequency of future flood events and the intensity of future flood events. As described in Section 3.2, Flood Control and Geomorphology, Projections of Future Mean Sea Level Change (p.3.2-51), the entire WSLIP program area (including the Sacramento River in the area of the Rivers project) is relatively insensitive to the projected changes in sea level rise. This effect is less than significant.

5.8.5.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on climate change. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
CC-1: Increase in Greenhouse Gas Emissions during Construction	Less than significant	N/A	N/A
CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs	Less than significant	N/A	N/A
CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change	Less than significant	N/A	N/A

Effect CC-1: Increase in Greenhouse Gas Emissions during Construction

Both SMAQMD and YSAQMD have not formally adopted GHG thresholds for projects such as The Rivers EIP. Therefore, a presumptive threshold of 7,000 metric tons (the lowest threshold of any formally adopted GHG threshold) is compared against the CO_2 emissions for The Rivers APA. As noted in Table 5.8-5, the CO_2 emissions project-wide without mitigation would be 702 metric tons per year. Within YSAQMD and SMAQMD, respectively, CO_2 emissions without mitigation would be 619 and 84 metric tons per year. These emissions are well below the

presumptive threshold and the effects of GHG emissions during construction are considered less than significant.

Effect CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Effect CC-3: Changes in Flood Frequency and Floodwater Elevation Caused by Global Climate Change

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Section 5.9
Noise—
The Rivers Early Implementation Project

5.9.1 Affected Environment

This section describes the affected environment for noise in The Rivers EIP project area, including the regulatory and environmental settings.

5.9.1.1 Regulatory Setting

5.9.1.1.1 State

There are no state policies related to noise that would apply to the implementation of The Rivers EIP. However, the *General Plan Guidelines* published by the Governor's Office of Planning and Research (2003) include recommendations for maximum noise exposure based on type of land use. These recommendations are available for counties and cities to adopt as part of their state-mandated requirement in establishing policies and standards in their general plans regarding incompatibilities between land uses as they relate to noise exposure.

There are no applicable Federal, state, or local quantitatively-defined regulations relating to vibration resulting from construction activities. Thresholds for annoyance and structural damage reported by Caltrans (2004) are used in this analysis. Please see the program information in Section 3.7.2.2, Regulatory Setting, for a more complete description of these thresholds.

5.9.1.1.2 Local

The following local policies related to noise may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.7.2.2, Regulatory Setting, for a more complete description of each policy.

- City of West Sacramento Noise Ordinance
- City of Sacramento Noise Ordinance
- *City of West Sacramento General Plan*
- *Yolo County General Plan*
- *City of Sacramento General Plan*

5.9.1.2 Environmental Setting

The environmental setting for The Rivers EIP is described in the Program Area Affected Environment. This section presents additional setting information specifically related to noise for The Rivers EIP project area.

Noise-sensitive land uses in the study area are primarily residential uses and schools. The following project-specific noise-sensitive receivers were used for this analysis:

- Waterfront homes across in river in the City of Sacramento, roughly 900 to 1,000 feet from the top of the levee.
- The Rivers housing development (in the City of West Sacramento) consisting of and single-family residences located west of the intersection of Riverbank Road and Todhunter Avenue. The closest dwellings are roughly 200 feet from the western terminus of the levee reach.
- Bryte Elementary School and Riverbank Elementary School (in the City of West Sacramento), with the closest classrooms roughly 450 feet from the levee reach. The City of West Sacramento noise ordinance sets a limit on indoor noise levels at schools caused by non-transportation noise sources, so the indoor classrooms were included as noise sensitive receivers. However, outdoor parks and recreation areas are not included as protected areas under the City of West Sacramento noise ordinance, and the ordinance does not list an allowable exterior noise level for schools. Therefore, the outdoor recreational facilities at the schools were not considered noise sensitive receivers for this analysis.
- Single-family homes on the south side of Riverbank Road and Fountain Drive (in the City of West Sacramento), roughly 150 feet from the top of the levee.
- Single-family homes on the north side of Rivercrest Drive (in the City of West Sacramento), roughly 50 feet from the centerline of the levee crest.

Bryte Park includes outdoor baseball fields, a soccer fields, and swimming pools within 200 feet of the levee reach. However, outdoor parks and recreation areas are not included as protected areas under the City of West Sacramento noise ordinance. Therefore, the outdoor recreational facilities at Bryte Park were not considered noise sensitive receivers for this analysis.

Primary noise sources in the project vicinity include vehicular traffic on local roadways and I-80. Secondary noise sources include boating traffic on the Sacramento River, schoolyard activities at Riverbank Elementary/Bryte Elementary, and airplane flyovers (to and from regional airports and facilities).

5.9.1.2.1 Ambient Noise Survey

An ambient noise survey was conducted by ICF Jones & Stokes on Thursday, February 5, 2009, to characterize the existing ambient noise environment in the study area. Short-term attended measurements were made at two locations using a Larson Davis 812 Type I integrating sound level meter (SLM). The SLM was calibrated before and after ambient measurements using a Larson Davis CAL200. The microphone of the meter was situated at a height of 5 feet above the ground during both measurements, which were conducted for a continuous duration of at least 10 minutes. The SLM was set to "slow" time response and A-weighting (dBA). Meteorological conditions were mild during short-term noise measurements, with measured temperatures between 60 and 63° F and measured wind speeds from 1 to 4 miles per hour. Accordingly, meteorological conditions were suitable for noise measurements (i.e., there were no conditions such as high wind that would distort the measurement data).

The first short-term measurement (ST1) was located adjacent to the northern Bryte Elementary/Riverbank Elementary School parking lot on the east end of Riverbank Road. Noise sources included schoolyard activity, distant highway traffic and a small plane flyover. The second short-term measurement (ST2) was located at the intersection of Riverbank Road and Todhunter

Avenue. Noise sources included local vehicular traffic, distant highway traffic and birds. The results of the ambient noise survey are summarized in Table 5.9-1.

Table 5.9-1. Ambient Noise Survey Results, The Rivers EIP Project Area

Location	Start Time	L_{eq}	L_{max}
ST1 (Riverbank Elementary School)	1:41 p.m.	51	66
ST2 (Todhunter Avenue)	2:04 p.m.	54	70
Note: All noise levels reported in terms of dBA. February 2009.			

5.9.2 Environmental Consequences

This section describes the environmental consequences relating to noise for the proposed Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP project, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects described in Section 3.7.3.3, Effects and Mitigation Measures.

5.9.2.1 Assessment Methods

This analysis focuses on the potential construction-related and operational noise effects associated with The Rivers EIP. Methods recommended by the Federal Transit Administration (2006) have been used to assess construction noise. Potential noise effects associated with construction activities have been evaluated by assuming the simultaneous operation of multiple pieces of heavy equipment as a reasonable upper bound for noise effects.

5.9.2.2 Determination of Effects

Determination of effects for noise and vibration for The Rivers EIP is the same as under the Program Area Environmental Consequences. The noise sensitive receivers considered for this analysis are in two separate cities, each of which has enacted its own noise ordinance. The daytime and nighttime noise ordinance limits for each city were applied as significance criteria for the noise sensitive in that city, even though all of the construction activity would be conducted within the City of West Sacramento. It is possible that construction activity for levee improvements might have to be conducted at night to respond to expedited schedule requirements. Therefore, the noise analyses described in this section assumes the project must comply with both the daytime and nighttime noise ordinance limits for the two local jurisdictions.

The Rivers EIP does not propose to introduce any new noise- sensitive uses where people would reside or work. Therefore, the effects of noise from public or private airports are not discussed further.

There are no significant sources of groundborne vibration associated with long-term operation of the proposed project after construction is completed. Therefore, operation of the proposed project would have no impact related to the exposure of persons to, or generation of excessive groundborne

vibration or groundborne noise levels and evaluation of this impact is not applicable, and is not discussed further.

5.9.3 Effects and Mitigation Measures

5.9.3.1 No Action Alternative

The No Action Alternative represents the continuation of the existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. Current levee operations and maintenance activities would continue, but there would be no noise or vibration associated with new construction or operational activities.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to under-seepage, slope stability, or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Noise program analysis (Section 3.7.3.3.1). In summary, those effects could include excessive noise and vibration levels for extended periods of time due to flood-fighting and cleanup efforts. However, the timing, duration and magnitude of a flood event are speculative and unpredictable, and therefore a precise determination of significance is not possible.

5.9.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following noise-related effects. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A
NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration	Significant	Significant and unavoidable	NZ-MM-4: Employ Measures to Prevent Buildings and Structures from Exposure to Excessive Groundborne Vibration

Effect NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise

The Rivers APA would construct cutoff walls using the standard slurry trench method along the western half of the reach and using deep soil mixing along the eastern half of the reach. The Rivers APA would also implement slope flattening. The staging area would be on the north side of the

existing levee, so homes on the south side of the levee would be shielded from staging area noise. Construction equipment on top of the levee would be visible and audible from homes throughout the study area.

Table 5.9-2 lists the construction noise levels at each representative noise sensitive receiver during each of the major stages of The Rivers APA construction, for the condition when the construction activity is closest to the receiver. That table compares the construction noise levels to the daytime and nighttime noise ordinance limits that are used to define significance. Spatial trends in noise levels caused by each category of construction activity, which were used to derive the values in Table 5.9-2, are provided in the Program Environmental Consequences section.

Table 5.9-2. Modeled Construction Noise Levels for The Rivers Applicant Preferred Alternative

Noise Sensitive Receiver	Closest Distance to Noise Source (feet)	Modeled Noise Level (dBA)		Daytime Noise Ordinance Limit (dBA)[1]		Nighttime Noise Ordinance Limit (dBA)[1]	
		L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}
Combined Slurry Cutoff Wall (Western Segment) and Staging/Mixing Area							
City of Sacramento Homes	1,100	52	48	75	59	70	54
Todhunter Ave. neighborhood	200	71	66	**70**	**50**	**65**	**45**
Riverbank Elementary School Classrooms (Indoor levels, see Note 2)	450	42	37	No Std.	45 (Indoors)	No Std.	45 (Indoors)
Fountain Drive Homes	150	75	70	**70**	**50**	**65**	**45**
Rivercrest Drive Homes	800	55	50	70	50	65	45
Combined Deep Soil Mixing (Eastern Segment) and Staging/Mixing Area							
City of Sacramento Homes	950	58	51	75	59	70	54
Todhunter Ave. neighborhood	2,400	47	41	70	50	65	45
Riverbank Elementary School Classrooms (Indoor levels)	900	39	32	No Std.	45 (Indoors)	No Std.	45 (Indoors)
Fountain Drive Homes	150	88	81	**70**	**50**	**65**	**45**
Rivercrest Drive Homes	50	92	85	**70**	**50**	**65**	**45**
Landside Levee Flattening							
City of Sacramento Homes	1,200	41	36	75	59	70	54
Todhunter Ave. neighborhood	150	76	71	**70**	**50**	**65**	**45**
Riverbank Elementary School Classrooms (Indoor levels)	400	43	38	No Std.	45 (Indoors)	No Std.	45 (Indoors)
Fountain Drive Homes	100	79	74	**70**	**50**	**65**	**45**
Rivercrest Drive Homes	100	79	74	**70**	**50**	**65**	**45**

[1] Bolded/underlined values indicate the noise ordinance limit is exceeded at the listed receiver.

[2] Indoor noise levels were estimated assuming the classroom windows are closed, which provides an assumed 20 dBA reduction compared to exterior noise levels (Federal Highway Administration 1995).

Key conclusions based on the modeling results in Table 5.9-2 are as follows:

- Construction of The Rivers APA would not cause noise levels at the waterfront homes in the City of Sacramento to exceed that City's nighttime noise ordinance limit. Therefore, impacts across the river would be less than significant even if nighttime construction is required.

- Indoor noise levels at Riverbank Elementary School would not exceed noise ordinance limits during the loudest construction activity.
- Construction noise would exceed the nighttime noise ordinance limit at the homes west of Todhunter Avenue only for brief periods when slurry cutoff wall construction or slope flattening is done along the western half of the reach.
- Both the daytime and nighttime noise ordinance limits would be exceeded for extended periods while levee improvements are done along the eastern half of the levee reach, near the Fountain Drive homes and the Rivercrest Drive homes.

As described in Environmental Commitments, Sections 2.9.1.5 and 2.9.1.5 (Noise-Reducing Construction Practices and Provide for Temporary Resident Relocation, respectively), the City has committed to implement BMPs to ensure that noise during construction does not cause significant effects at nearby homes. The contractor will obtain a temporary construction noise variance from the City, including all requirements for environmental review and public notification and comment. In this case, the contractor will implement aggressive noise reduction measures. The contractor will conduct community noise monitoring, and the City will provide assistance and compensation for residents to temporarily relocate if construction noise levels exceed noise ordinance limits. Based on these project-specific commitments, it is concluded that although construction noise would exceed noise ordinance limits, the effects of the high noise levels would be less than significant.

Similarly, construction-related haul trucks and commute vehicles traveling along public streets are not expected to cause 24-hour day-night (L_{dn}) noise levels exceeding the City's noise limits for transportation noise sources. The highest truck traffic volumes along residential streets would occur along the two-block segment of 5th Street (between A Street and C Street), where there are single-family and multi-family dwellings along the road. As described in Section 5.7, Transportation and Navigation, temporary construction activity could generate up to 296 haul truck trips per day and 72 worker commute trips per day. If the haul trucks and commute vehicles were used 24 hours per day, the project-related traffic noise level at the existing dwellings along 5th Street would be 61 dBA-L_{dn}. That project-related L_{dn} noise level is less than the 65 dBA-L_{dn} limit set by the City's noise ordinance. If haul trucks usage could be restricted to daytime hours, then the resulting L_{dn} noise levels would be lower. Therefore, this impact would be less than significant. No mitigation is required.

Effect NZ-3: Exposure of Sensitive Receptors to Intermittent Noise Due to Ongoing Maintenance Activities and Permanent Facility Operations

There would be no additional ongoing flood control-related levee maintenance activities beyond what is currently undertaken to control vegetation. Recreation trail maintenance would include sweeping, pavement repair, removal of obstacles, and periodic asphalt overlays. These maintenance activities would not have a significant effect on noise or vibration. Levee patrol roads (where permanent bike/paths and trails would be installed) are currently used for biking and walking and noise levels as a result of the use of improved paths would likely be similar to existing conditions. Therefore, this effect would be considered less than significant. No mitigation is required.

Effect NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration

The operation of heavy equipment may generate groundborne vibration that could be perceptible at residences or other sensitive land uses close to construction activity. Based on vibration reference levels from Federal Transit Administration (2006), vibration from construction activity would attenuate to less than 0.1 in/sec ppv within about 50 feet under typical conditions. Because sensitive receptors in The Rivers residential community would potentially be located within this distance, this effect is considered to be potentially significant. Implementation of Mitigation Measure NZ-MM-4 would reduce this effect, but not to a level that would be less than significant.

Mitigation

Mitigation Measure NZ-MM-4: Employ Measures to Prevent Exposure of Buildings and Structures to Excessive Groundborne Vibration

WSAFCA or its contractor will, to the extent feasible, maintain a minimum distance of 50 feet between construction equipment and occupied or vibration-sensitive buildings or structures. For cases where this is not feasible, the resident or property owner will be notified in writing prior to construction activity, and where necessary, relocated to temporary housing for the duration of construction activity. WSAFCA will inspect the interior walls of those homes prior to construction to inventory existing cracks in paint and plaster and will retain a qualified acoustical consultant or engineering firm to conduct vibration monitoring at that building to measure the actual vibration levels during construction. Following completion of construction, WSAFCA will conduct a second inspection to inventory new damage to paint and plaster, if any, that occurred as a result of construction-induced vibration. If new damage is found, then WSAFCA will promptly arrange to have the damaged repaired, or will reimburse the property owner for appropriate repairs.

In addition, if construction activity is required within 100 feet of residences or other vibration-sensitive buildings, a designated complaint coordinator will be responsible for handling and responding to any complaints received during such periods of construction. A reporting program will be required that documents complaints received, actions taken, and the effectiveness of these actions in resolving disputes.

5.9.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following noise-related effects. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise	Less than significant	N/A	N/A
NZ-2: Exposure of Sensitive Receptors to Temporary Vibration Caused by Pile Driving	Significant	Less than significant	NZ-MM-1: Limit Pile-Driving Vibration and Implement a Pile-Driving Vibration Control Plan
NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations	Less than significant	N/A	N/A

Effect	Finding	With Mitigation	Mitigation Measure
NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration	Significant	Significant and unavoidable	NZ-MM-4: Employ Measures to Prevent Exposure of Buildings and Structures to Excessive Groundborne Vibration

Effect NZ-1: Exposure of Sensitive Receptors to Temporary Construction-Related Noise

The Rivers Alternative B would construct a sheet pile cutoff wall into the top of the levee along the entire levee reach. The Rivers Alternative B would also implement slope flattening. The staging area would be on the north side of the existing levee, so homes on the south side of the levee would be shielded from staging area noise. Construction equipment on top of the levee would be visible and audible from homes throughout the study area.

Table 5.9-3 lists the construction noise levels at each representative noise sensitive receiver during each of the major stages of The Rivers Alternative B construction, for the condition when the construction activity is closest to the receiver. That table compares the construction noise levels to the daytime and nighttime noise ordinance limits that are used to define significance. Spatial trends in noise levels caused by each category of construction activity, which were used to derive the values in Table 5.9-3, are provided in the Program Environmental Consequences section.

Table 5.9-3. Modeled Construction Noise Levels for The Rivers Alternative B

Noise Sensitive Receiver	Closest Distance to Noise Source (feet)	Modeled Noise Level (dBA)		Daytime Noise Ordinance Limit (dBA)[1]		Nighttime Noise Ordinance Limit (dBA)[1]	
		L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}
Sheet Pile Driving and Staging/Mixing Area							
City of Sacramento Homes	1,100	66	59	75	59	70	54
Todhunter Ave. neighborhood	200	85	78	70	50	65	45
Riverbank Elementary School Classrooms (Indoor levels)	450	55	48	No Std.	**45 (Indoors)**	No Std.	**45 (Indoors)**
Fountain Drive Homes	150	85	78	**70**	**50**	**65**	**45**
Rivercrest Drive Homes	50	101	94	**70**	**50**	**65**	**45**
Landside Levee Flattening							
City of Sacramento Homes	1,200	41	36	75	59	70	54
Todhunter Ave. neighborhood	150	76	71	**70**	**50**	**65**	**45**
Riverbank Elementary School Classrooms (Indoor levels)	400	43	38	No Std.	45 (Indoors)	No Std.	45 (Indoors)
Fountain Drive Homes	100	79	74	**70**	**50**	**65**	**45**
Rivercrest Drive Homes	100	79	74	**70**	**50**	**65**	**45**

Noise Sensitive Receiver	Closest Distance to Noise Source (feet)	Modeled Noise Level (dBA)		Daytime Noise Ordinance Limit (dBA)[1]		Nighttime Noise Ordinance Limit (dBA)[1]	
		L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}

[1] Bolded/underlined values indicate the noise ordinance limit is exceeded at the listed receiver.

[2] Indoor noise levels were estimated assuming the classroom windows are closed, which provides an assumed 20 dBA reduction compared to exterior noise levels (Federal Highway Administration 1995).

The conclusions based on the noise results shown in Table 5.9-3 are as follows:

- Sheet pile driving would not cause noise levels at homes across the river in the City of Sacramento to exceed the nighttime noise ordinance limits. Therefore, noise impacts at that location would be less than significant.
- Sheet pile driving would cause indoor noise levels inside classrooms at Riverbank Elementary School to exceed the City's noise ordinance limit, assuming the classroom windows are closed and the windows provide a nominal 20 dBA reduction compared to exterior levels.
- Sheet pile driving would cause exceptionally high noise levels at homes along Riverbank Road, Rivercrest Drive, and Fountain Drive.
- Noise levels during levee slope flattening would be much lower than the noise that would occur during sheet pile driving. However, this activity would cause noise to exceed daytime and nighttime noise ordinance limits when the construction was done within roughly 1,500 feet of a dwelling.

The construction noise levels at homes and school classrooms would be addressed by the project-level environmental commitments described in Section 2.9.1. Those commitments include temporarily relocating residents, if construction noise levels exceed noise ordinance limits. In addition, the City would commit to installing acoustical insulation in noise-affected classrooms at Bryte Elementary School and Riverbank Elementary School. Therefore, even though construction noise levels would exceed the City noise ordinance limits, the high noise levels would not be considered significant. No mitigation is required.

Similar to the The Rivers APA, haul trucks and worker commute vehicles traveling along public streets would not cause project-related traffic noise to exceed the City's noise ordinance limits, even if haul trucks were used 24 hours per day. Forecast traffic noise levels for The Rivers APA are less than the City noise ordinance limit, and Alternative B would generate lower traffic volumes than the APA. Therefore, traffic noise generated by Alternative B would also be less than the City noise ordinance limit, and would not be considered significant. No mitigation is required.

Effect NZ-2: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration

The Rivers Alternative B would include installation of a sheet pile cutoff wall along the top of the levee. Some existing homes are within 50 feet of the possible alignment from the sheet pile wall. The specific type of pile driver to be used has not been determined. Therefore, for this assessment it was assumed an impact pile driver would be used, because that type of equipment would generate the highest vibration levels.

Sheet piles would be driven into the top of the levee, which is constructed of compacted, fine-grained embankment material. Based on that soil type, the source vibration level for an impact pile driver is estimated to be 0.644 inch/sec ppv, the typical value cited by the Federal Transit Administration (2006). Table 5.9-4 shows the estimated ground vibration levels that would occur at various distances from the pile driver. A ppv vibration level of 0.20 inch/sec, which is the level that might cause cracking of interior walls made of plaster, would occur 60 feet from the pile driver. The ppv level of 0.10 inch/sec, which is the level described as "strongly discernible," would occur 90 feet from the pile driver. Therefore, this assessment concludes that a ground vibration impact might occur at homes within 100 feet of the pile driver.

Because sensitive receptors in The Rivers residential community would potentially be located within this 100-foot distance, this effect is considered significant. Implementation of Mitigation Measure NZ-MM-1 would reduce this effect to a less-than-significant level.

Table 5.9-4. Estimated Ground Vibration Levels Caused by Impact Pile Driver

Distance from Construction Equipment (feet)	Ground Vibration PPV (inches/second)
25	0.64
50	0.23
60	0.20 Potential damage to interior plaster walls
90	0.10 "Strongly discernible" impact criterion
100	0.080
150	0.044

Based on Federal Transit Administration 2006 and California Department of Transportation 2004. Assumes a single impact pile driver installing sheet piles, with a source vibration level (PPV) of 0.644 inches/second at a reference distance of 25 feet.

Mitigation

Mitigation Measure NZ-MM-1: Limit Pile-Driving Vibration and Implement a Pile-Driving Vibration Control Plan

WSAFCA will employ vibration-reducing construction practices such that pile driving vibration does not exceed 0.2 inch per second at any adjacent structure. WSAFCA will prepare a vibration control plan that will identify feasible measures that will be employed to reduce construction vibration where necessary. These measures may include but are not limited to:

- maximizing the distance between pile driving and structures;
- employing resilient pile caps to reduce vibration amplitude; and
- employing alternative driving methods such as vibratory driving to reduce vibration.
- If the above reduction measures are not feasible at any given location, then WSAFCA will inspect the structure before pile driving begins, conduct vibration monitoring during pile driving, and inspect the structure again after completion of pile driving. WSAFCA will promptly take corrective measures to repair identified damages caused by the pile driving.

Effect NZ-3: Exposure of Sensitive Receptors to Intermittent Noise as a Result of Ongoing Maintenance Activities and Permanent Facility Operations

There would be no additional ongoing flood control-related levee maintenance activities beyond what is currently undertaken to control vegetation. Recreation trail maintenance would include sweeping, pavement repair, removal of obstacles, and periodic asphalt overlays. These maintenance activities would not have a significant effect on noise or vibration. Levee patrol roads (where permanent bike/paths and trails would be installed) are currently used for biking and walking and noise levels as a result of the use of improved paths would likely be similar to existing conditions. Therefore, this effect would be considered less than significant. No mitigation is required.

Effect NZ-5: Exposure of Sensitive Receptors to Temporary Construction-Related Vibration

The operation of heavy equipment other than pile-drivers may generate groundborne vibration that could be perceptible at residences or other sensitive land uses close to construction activity. Based on vibration reference levels from Federal Transit Administration (2006), vibration from construction activity would attenuate to less than 0.1 in/sec ppv within about 50 feet under typical conditions. Because sensitive receptors in The Rivers residential community would potentially be located within this distance, this effect is considered significant. Implementation of Mitigation Measure NZ-MM-4 (as described above under The Rivers APA) would reduce this effect, but not to a less-than-significant level.

Section 5.10
Vegetation and Wetlands—The Rivers Early Implementation Project

5.10.1 Affected Environment

This section describes the affected environment for vegetation and wetlands, the effects on vegetation and wetlands that would result from the No Action, APA, and Alternative B; and the mitigation measures that would reduce these effects.

The key sources of data and information used in the preparation of this section are listed and briefly described below.

- a CNDDB records search of the USGS 7.5-minute Grays Bend, Taylor Monument, Rio Linda, Davis, Sacramento West, Sacramento East, Saxon, Clarksburg, and Florin quadrangles (California Natural Diversity Database 2009b);
- the USFWS list of endangered, threatened, and proposed species for the USGS 7.5-minute Sacramento West quadrangle and Yolo County obtained from the USFWS web site (U.S. Fish and Wildlife Service 2009b);
- the CNPS 2009 online *Inventory of Rare and Endangered Plants of California* (California Native Plant Society 2009b);
- the CDFA's Pest Ratings of Noxious Weed Species and Noxious Weed Seed (California Department of Food and Agriculture 2009);
- the Cal-IPC's California Invasive Plant Inventory (California Invasive Plant Council 2006, 2007); and
- City of West Sacramento General Plan Policy Document (City of West Sacramento 2004).

5.10.1.1 Regulatory Setting

5.10.1.1.1 Federal

The following Federal policies related to vegetation and wetlands may apply to implementation of The Rivers EIP. Please see Section 3.8.2.1, Regulatory Setting, for a more complete description of each policy.

- Endangered Species Act
- Clean Water Act
- Rivers and Harbors Act
- Executive Order 11990: Protection of Wetlands
- Executive Order 13112: Invasive Species

5.10.1.1.2 State

The following state policies related to vegetation and wetlands may apply to implementation of The Rivers EIP. Please see Section 3.8.2.1, Regulatory Setting, for a more complete description of each policy.

- California Endangered Species Act
- California Native Plant Protection Act
- California Fish and Game Code
- Porter-Cologne Water Quality Control Act

5.10.1.1.3 Local

The following local policies related to vegetation and wetlands may apply to implementation of The Rivers EIP. Please see Section 3.8.2.1, Regulatory Setting, for a more complete description of each policy.

- *Yolo County General Plan*
- *Yolo County Oak Woodland Conservation and Enhancement Plan*
- *City of West Sacramento General Plan*
- *City of West Sacramento Tree Preservation Ordinance*

5.10.1.2 Environmental Setting

This section discusses the environmental setting related to vegetation and wetlands in the project study area for The Rivers EIP, including the methods used to evaluate vegetation and wetland conditions, a description of existing land cover types in the study area, identification of waters of the United States (including wetlands), and discussions of the special-status plants that are known to occur in the project region, native tree resources, and invasive plant species.

5.10.1.2.1 Study Area

For the purposes of this section, The Rivers EIP study area consists of the project disturbance footprint plus an additional 100-foot-wide buffer zone to support an assessment of potential indirect effects. The width of the buffer zone was selected to account for indirect effects on elderberry shrubs (*Sambucus mexicana*) that are the host plant for the federally threatened valley elderberry longhorn beetle (VELB), which is discussed in Section 3.10, Wildlife. Areas designated for site access and construction staging are included in the project disturbance footprint. The study area occurs within the Great Central Valley subdivision of the California Floristic Province in Yolo County (Hickman 1993: 44, 45) and encompasses a portion of the Sacramento River North Levee. The majority of the study area consists of the levee itself, which has a broad, flat crown and is sloped on the landside only. The study area is bounded on the north by non-native annual grassland and riparian habitat and on the other three sides by developed and landscaped areas that include commercial development, residential development, Bryte Park, and Riverbank Elementary School. The topography of the portion of the study area adjacent to the levee is relatively level and elevations in the study area range from approximately 20 to 26 feet above mean sea level.

5.10.1.2.2 Field Surveys

The methods used to identify vegetation and wetland resources in the study area consisted of a pre-field investigation, reconnaissance-level site visits, a delineation of wetlands and other waters, an arborist survey, and a botanical survey. Each of these components is described below.

Pre-Field Investigation

Prior to conducting the reconnaissance-level site visits an ICF International botanist/wetland ecologist reviewed information pertaining to vegetation and wetland resources in the project region from the sources listed below.

- a CNDDB records search of the USGS 7.5-minute Sacramento West, Sacramento East, Grays Bend, Taylor Monument, Rio Linda, Davis, Clarksburg, Saxon, and Florin quadrangles (California Natural Diversity Database 2009a);
- the USFWS list of endangered, threatened, and proposed species for the USGS 7.5-minute Sacramento West quadrangle and Yolo County obtained from the USFWS web site (U.S. Fish and Wildlife Service 2009a); and
- the CNPS's 2009 online *Inventory of Rare and Endangered Plants of California* (California Native Plant Society 2009a).

No Federal, state, or local regulatory agencies were contacted prior to conducting the pre-field investigation; however, it was not appropriate at that time because the potential for the study area to contain sensitive vegetation and wetland resources could not be completely evaluated without field observations.

Reconnaissance-Level Site Visits

The botanist/wetland ecologist conducted three reconnaissance-level site visits to evaluate existing vegetation and wetland resources in the study area. The field visits were conducted on September 19 and October 5, 2007, and January 9 and February 13, 2009. The purpose of these site visits was to:

- Identify land cover types and compare field observations with existing vegetation data.
- Evaluate whether potential habitat may be present for special-status plant species that have been identified in the project region.
- Identify potential wetlands and other waters of the United States and/or state that should be delineated during future surveys.
- Identify trees that may potentially be protected under the City of West Sacramento's Tree Preservation Ordinance.
- Identify invasive plant species present in the study area.

Delineation of Wetlands and Other Waters

An ICF International soil scientist and a botanist delineated wetlands and other waters of the United States in the study area on December 29, 2008. The delineation was conducted to identify the types and locations of wetlands and other waters that may be subject to regulation by Federal (USACE) and/or state (Central Valley RWQCB) agencies. The delineation was conducted in accordance with guidance provided in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987: 53–69), the Regional Supplement to the Corps of Engineers 1987 Manual: Arid West Region (U.S. Army Corps of Engineers 2008), and USACE Regulatory Guidance Letter RGL 05-05 (U.S. Army Corps of Engineers 2005). The delineation was conducted to support the submission of a preliminary jurisdictional determination to the USACE Sacramento District and to obtain wastewater discharge requirements from the Central Valley RWQCB for waters of the state.

Arborist Survey

An ICF International arborist conducted tree surveys within the project disturbance footprint on April 10, 2009. The arborist survey methods follow standard professional practices and all tree location data were collected with a global positioning system unit with sub-meter accuracy. The arborist recorded the species, number of trunks, and diameter at breast height, tree height, dripline diameter, and the health and vigor of each tree.

Botanical Survey

Two ICF International botanists conducted a botanical survey in the study area on April 30, 2009. The botanists walked meandering transects throughout the study area. All plant species observed were identified to the level necessary to determine if they were special-status plants or were plant species with unusual or significant range extensions. The list of all plants observed in the study area is included as Appendix F.

5.10.1.2.3 Land Cover Types

The study area contains three land cover types: Great Valley valley oak riparian forest, non-native annual grassland, the Sacramento River, and unvegetated/vacant/developed areas. The Great Valley valley oak riparian forest and non-native annual grassland are natural communities identified in DFG's List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database (California Department of Fish and Game 2003). Each of the land cover types is discussed below and shown in Figure 5.10-1.

Great Valley Valley Oak Riparian Forest

The Great Valley valley oak riparian forest occurs in a narrow corridor along the Sacramento River and has an overstory of mature, well-established trees (Figure 5.10-1). Approximately 8.99 acres of Great Valley valley oak riparian forest occur within the study area; however, only 2.07 acres occurs within the project disturbance footprint. Valley oak (*Quercus lobata*) is the dominant species, but Fremont cottonwood (*Populus fremontii* ssp*. fremontii*), box elder (*Acer negundo* var. *californicum*), and interior live oak (*Quercus wislizeni*) are also present. The shrub layer was predominantly Himalayan blackberry (*Rubus discolor*) and poison oak (*Toxicodendron diversilobum*). Scattered elderberry shrubs occur within and along the southern edge of the riparian forest. Riparian forest is



Figure 5.10-1

Land Cover Types in the Study Area at
The Rivers Early Implementation Project Site

Habitat	Project Area		Acres
	Construction Limit	Staging Area	Total in Study Area
Non-native Annual Grassland	9.57	0.55	11.19
Unvegetated/ Vacant/Developed	8.90	---	25.16
Great Valley Oak Riparian Forest	2.07	---	8.99
Sacramento River	---	---	0.59
Total Acreage	**20.54**	**0.55**	**45.93**

- Study Area
- Construction Limit
- Staging Area
- Paved Pedestrian Trail
- Paved Trail Landing
- Levee Embankment Ramp
- Alignment
- Paved Bicycle Trail

N

Feet
400 200 0 400

Aerial Photo Source: Aerials Express, 2007

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identified as a sensitive natural community by the California Natural Diversity Database (California Natural Diversity Database 2009b).

Non-Native Annual Grassland

The non-native annual grassland in The Rivers EIP study area occurs between the Great Valley valley oak riparian forest and the unvegetated/vacant/developed areas Indications of past and ongoing disturbance are evident (e.g., numerous dirt trails, transient camps) (Figure 5.10-1). Approximately 11.19 acres of non-native annual grassland occur within the study area and the majority of it (approximately 10.12 acres) occurs within the project disturbance footprint. Species commonly observed in the non-native annual grassland were wild oat (*Avena fatua*), ripgut brome, soft chess, rattail fescue (*Vulpia myuros* var. *myuros*), foxtail barley (*Hordeum murinum* spp. *leporinum*), and Italian ryegrass (*Lolium multiflorum*). Forb species observed in non-native annual grasslands in the study area were Mediterranean mustard, big heronbill (*Erodium botrys*), prickly lettuce (*Lactuca serriola*), horseweed (*Conyza canadensis*), and wild radish (*Raphanus* spp.).The annual grassland was very dense on the landside slope of the levee but sparser on the levee crown, where open, sandy areas were observed. The annual grasslands in the study area contain a relatively large proportion of ruderal species, likely as a result of the substantial degree of disturbance from human activities (e.g., numerous dirt trails traverse the grasslands in the northern portion of the study area).

Sacramento River

The study area contains 0.59 acre of the Sacramento River that is comprised of a small area of open water and the portion of the riverbank located below the OHWM. The Sacramento River is located outside the construction zone in the buffer zone component of the study area.

Unvegetated/Vacant/Developed

The unvegetated/vacant/developed portions of the study area consist of paved and unpaved roads, commercial development, residential development, Bryte Park, and Riverbank Elementary School and encompass approximately 25.16 acres (Figure 5.10-1). The commercial development is located in the western portion of the study area that is adjacent to the Sacramento River. The majority of the residential development is located in the southern half of the eastern portion of the study area. Riverbank Elementary School and Bryte Park are in the southern half of the western portion of the study area. Plant species observed in developed/landscaped areas were non-native ornamentals.

5.10.1.2.4 Waters of the United States, Including Wetlands

No wetlands occur within the study area. However, the study area contains 0.59 acre of the Sacramento River, which includes both areas of open water and portions of the riverbank that are located below the OHWM.

5.10.1.2.5 Special-Status Plant Species

Special-status plant species are plants that are legally protected under CESA, ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. Categories of special-status plant species are described in Program Affected Environment.

Eighteen of the 34 special-status plant species identified in the Program Affected Environment were identified as occurring in the project region (California Natural Diversity Database 2009b; California Native Plant Society 2009b; U.S. Fish and Wildlife Service 2009b). The number of special-status plant species identified as having the potential to occur in the program study area differs from the number of special-status plants identified as potentially occurring in the EIP study area because the EIP study area encompasses a much smaller area. Four of the 18 species are federally and/or state-listed as endangered or threatened: palmate-bracted bird's-beak (*Cordylanthus palmatus*), Boggs Lake hedge hyssop (*Gratiola heterosepala*), Colusa grass (*Neostapfia colusana*), and Crampton's tuctoria (*Tuctoria mucronata*). The status, distribution, habitat requirements, and identification period of the 18 species are shown in Table 3.8-4 of Section 3.8, Vegetation and Wetlands. One of the species, little mousetail (*Myosurus minimus* ssp. *apus*), occurs at elevations that are at least 30 feet higher than the highest elevation within the study area. Although the Fremont cottonwood riparian forest is habitat for northern California black walnut, no protected native stands were observed during any of the site visits.

Five of the remaining 16 species occur in habitats (i.e., vernal pools, marshes) that are not present in the study area: Bogg's Lake hedge hyssop (*Gratiola heterosepala*), rose-mallow (*Hibiscus lasiocarpus*), legenere (*Legenere limosa*), Colusa grass (*Neostapfia colusana*), and Sanford's arrowhead (*Sagittaria sanfordii*). Although habitat is present in the grassland for eight of the remaining ten species, suitable microhabitat (mesic areas, adobe clay soils, alkaline soils) is not present. No mesic areas were observed during site visits and no alkaline, serpentine, or adobe clay soils have been documented in the two soil mapping units present in the study area: Lang sandy loam and Sycamore silt loam (Andrews 1972: 15, 16, 33, 34). Two special-status plant species, stinkbells (*Fritillaria agrestis*) and heartscale (*Atriplex cordulata*) were determined to have low potential to occur in the study area. No special-status plants were observed in the study area during the April 30, 2009 botanical survey that coincided with the identification periods of stinkbells and heartscale (California Native Plant Society 2009b).

The timing of the survey also coincided with the identification period of eight other special-status plant species identified during the pre-field investigation as occurring in the project region (California Native Plant Society 2009b) but for which the study area lacked suitable habitat or microhabitat. Therefore, the proposed alternatives for The Rivers EIP would not have a significant effect on special-status plants and effects on special-status plants are not discussed further. The closest special-status plant occurrence to the study area is rose-mallow that has been documented approximately 1 mile northeast of the Sacramento River North Levee (California Natural Diversity Database 2009b); however, no suitable habitat (i.e., freshwater marsh) is present in the The Rivers study area.

5.10.1.2.6 Tree Resources

Approximately 89 trees were observed in the study area during the April 2009 arborist survey and consisted of box elder, interior live oak (*Quercus wislizeni*), coast live oak (*Quercus agrifolia*), Fremont cottonwood, redwood (*Sequoia sempervirens*), plane tree (*Platanus* sp.), and miscellaneous non-native or ornamental species (e.g., cork oak [*Quercus suber*], pepper tree [*Schinus* sp.]). The results of the April 2009 arborist survey are shown in Table 5.10-1. None of the trees observed during the arborist survey met the definition of a heritage or landmark tree as defined in the City's Tree Preservation Ordinance. Therefore, the proposed project would not have a significant effect on trees protected under the City's Tree Preservation Ordinance and effects on protected trees are not discussed further.

Table 5.10-1. Arborist Survey Results for The Rivers EIP

Tree Species	Number of Individuals Observed
Box elder	19
Interior live oak	10
Chinese elm	1
Fremont cottonwood	5
Redwood	4
Plane tree	12
Valley oak	27
Other Ornamental Trees	11

5.10.1.2.7 Invasive Plant Species

Plant species that are considered invasive by the California Department of Agriculture and the California Invasive Plant Council are well-represented and fairly widespread throughout the study area (California Invasive Plant Council 2006, 2007; California Department of Agriculture 2009). Invasive plant species observed in the study area included Himalayan blackberry, yellow star-thistle, Bermuda grass, Mediterranean mustard, and ripgut brome. The California Department of Food and Agriculture and California Invasive Plant Council ratings for the invasive species observed during the site visits are provided in the plant list for the study area (Appendix F).

5.10.2 Environmental Consequences

This section describes environmental consequences relating to vegetation and wetland resources for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.8.3.3, Effects and Mitigation Measures.

5.10.2.1 Assessment Methods

Evaluation of the vegetation and wetland effects in this section is based on the information provided by technical maps, reports, and other documents that describe the resource conditions of the study area. This information was then compared to the type and location of proposed flood and recreation alternatives to determine whether effects would occur.

5.10.2.2 Determination of Effects

For this analysis, based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.), an effect pertaining to vegetation and wetlands was considered significant if it would:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or USFWS;

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by DFG or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by CWA Section 404 (including, but not limited to, marshes and vernal pools) through direct removal, filling, hydrological interruption, or other means;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan.

5.10.2.2.1 Effect Assumptions

The following assumptions regarding effects on vegetation and wetlands in The Rivers study area have been made for this analysis:

- No special-status plants occur in the study area and therefore effects on these species are not discussed in this section.
- No landmark or heritage trees occur in the study area and therefore effects on protected trees are not discussed in this section.
- No direct effects on elderberry shrubs would result from implementation of the project alternatives.
- All project activities, including equipment staging and access, would take place within the project disturbance footprint and noted staging areas.
- The project would comply with USACE vegetation-free policy (i.e., no vegetation is permitted within the levee's operation and maintenance zone, which includes the levee itself and an area extending 15 feet from the landside and waterside toes).
- Fill or borrow material would be obtained from a quarry or other authorized location.
- There would be effects related to the routine operation or maintenance activities under the proposed project. WSAFCA would continue with the authorized levee maintenance actions that are currently used on the Sacramento River North Levee.
- If discharge of fill into waters of the United States is associated with the proposed project, WSAFCA would require a CWA Section 404 permit from the USACE Sacramento District, and CWA Section 401 certification from the Central Valley RWQCB. Before construction begins, WSAFCA would obtain all necessary permits pertaining to affected waters of the United States. The permitting process would also require compensation for construction-, operation-, and maintenance-related effects.
- Grading would require a CWA Section 402 permit and preparation of a SWPPP.
- Grading or other construction activities would require a streambed alteration agreement from DFG.

5.10.2.2.2 Effect Mechanisms

Vegetation and wetland resources could be directly and indirectly affected by The Rivers EIP. The following types of activities could cause varying degrees of effects on these resources:

- grading, and fill placement during construction of levee alternatives;
- channel dewatering or installation of temporary water-diversion structures;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site into adjacent areas;
- introduction or spread of invasive plant species into adjacent open space areas; and
- runoff of herbicides, fertilizers, diesel fuel, gasoline, oil, raw concrete, or other toxic materials used for levee alternatives, operations, and maintenance into sensitive biological resource areas (e.g., riparian habitat, wetlands).

5.10.3 Effects and Mitigation Measures

5.10.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects on vegetation, such as disturbance of special-status plant species or wetlands would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to under-seepage, slope stability, or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the programmatic Vegetation and Wetlands analysis (Section 3.8.3.3.1). In summary, these effects could include significant loss of vegetation and habitat quality due to both the hydraulic forces of the flood itself as well as the clean-up efforts. However, given the uncertainty of the occurrence or magnitude of such an event, potential effects on vegetation and waters of the United States cannot be fully quantified based on available information.

Compliance with USACE's levee vegetation guidance could result in the removal of a substantial amount of vegetation, including vegetation that comprises mature oak woodland and supports wildlife populations (including special-status species). This effect could be considered significant.

5.10.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on vegetation and wetlands. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VEG-3: Disturbance of Removal of Riparian Vegetation as a Result of Program Construction	Significant	Less than significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than significant	N/A	

Effect VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Program Construction

The construction activities associated with The Rivers APA would result in the loss of 2.07 acres of Great Valley valley oak riparian forest (a sensitive natural community). These effects result from the riparian habitat being located within the project disturbance footprint (i.e., the construction zone) and compliance with the USACE policy regarding vegetation on levees. This effect is significant. Implementation of mitigation measures VEG-MM-1, VEG-MM-4, VEG-MM-5, VEG-MM-6, and VEG-MM-7, described below, would reduce this effect to a less-than-significant level.

Mitigation

Mitigation Measure VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat

For direct effects on woody riparian habitat that cannot be avoided, WSAFCA will compensate for the loss of riparian habitat to ensure no net loss of habitat functions and values. Compensation ratios will be based on site-specific information and determined through coordination with the appropriate state and Federal agencies during the permitting process (e.g.,2:1=2 acres restored/created/enhanced or credits purchased for every 1 acre removed. Compensation may be a combination of off-site restoration or mitigation credits. WSAFCA will develop a restoration and monitoring plan that describes how riparian habitat will be enhanced or recreated and monitored over a minimum period of time, as determined by the appropriate state and Federal agencies.

If WSAFCA identifies on-site areas (adjacent to the levees) that are outside the USACE vegetation-free zone and chooses to compensate on site or in the project vicinity, a revegetation plan will be prepared. The revegetation plan will be developed prior to the removal of existing riparian vegetation and will be conducted on site or in the project vicinity to the extent feasible; however, mitigation site selection will avoid areas where future levee alternatives or maintenance is likely.

The revegetation plan will be prepared by a qualified restoration ecologist and reviewed by the appropriate agencies. The revegetation plan will specify the planting stock appropriate for each riparian land cover type and each mitigation site, ensuring the use of genetic stock from the project area. The plan will employ the most successful techniques available at the time of planting. Success criteria will be established as part of the plan. Plantings will be maintained for a minimum of 5 years, including weed removal, irrigation, and herbivory protection.

WSAFCA will monitor the plantings annually for 4 years, followed by monitoring every 2 years for the next 6 years to ensure that the plantings have established successfully. WSAFCA will submit annual monitoring reports of survival to the regulatory agencies issuing permits related to habitat effects, including DFG, USACE, NMFS, and USFWS. Replanting will be necessary if success criteria are not met. The riparian habitat mitigation will be considered successful when the sapling trees established meet the success criteria, the habitat no longer requires active management, and vegetation is arranged in groups that, when mature, replicate the area, natural structure, and species composition of similar riparian habitats in the region.

Mitigation Measure VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Before any work occurs in the project area, including grading, a qualified biologist will conduct mandatory contractor/worker awareness training for construction personnel. The awareness training will be provided to all construction personnel to brief them on the need to avoid effects on sensitive biological resources (e.g., riparian habitat, special-status species, special-status wildlife habitat) and the penalties for not complying with permit requirements. The biologist will inform all construction personnel about the life history of special-status species with potential for occurrence on site, the importance of maintaining habitat, and the terms and conditions of the biological opinion or other authorizing document. Proof of this instruction will be submitted to USFWS, DFG, or other overseeing agency, as appropriate.

The training will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on special-status species during project construction. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and

restrictions. Educational training will be conducted for new personnel as they are brought on the job during the construction period. General restrictions and guidelines for vegetation and wildlife that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the project site.
- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.
- All food-related trash will be disposed of in closed containers and removed from the study area at least once a week during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the project site.
- No pets or firearms will be allowed in the project site.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.

For special-status wildlife, any worker who inadvertently injures or kills a special-status wildlife species or finds one dead, injured, or entrapped will immediately report the incident to the biological monitor. The monitor will immediately notify WSAFCA, who will provide verbal notification to the USFWS Endangered Species Office or the local DFG warden or biologist within 3 working days. WSAFCA will follow up with written notification to USFWS or DFG within 5 working days.

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone

The construction specifications will require that WSAFCA retain a qualified biologist to identify sensitive biological resources (e.g., special-status species, riparian habitat, wetlands, elderberry shrubs) adjacent to the construction zone that are to be avoided during construction. Sensitive biological resources located adjacent to the directly affected area required for construction, including staging and access, will be fenced off to avoid disturbance in these areas. If necessary, concrete barriers will also be installed to protect sensitive biological resources in areas adjacent to the directly affected area.

Before construction, the contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing (and, if necessary, concrete barriers) and will place stakes around the sensitive biological resources to indicate their locations. The protected area will be clearly identified on the construction specifications. The fencing will be installed at least 20 feet from each sensitive biological resource and will be in place before construction activities are initiated. The fencing will be maintained by WSAFCA or its contractor throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is replaced.

Mitigation Measure VEG-MM-6: Retain a Biological Monitor

WSAFCA will retain qualified biologists to monitor construction activities adjacent to sensitive biological resources (e.g., special-status species, riparian habitat, wetlands, elderberry shrubs). The biologists will assist the construction crew, as needed, to comply with all program implementation restrictions and guidelines. In addition, the biologists will be responsible for ensuring that the

program proponent or its contractors maintain the construction barrier fencing adjacent to sensitive biological resources.

Mitigation Measure VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources

WSAFCA will redesign proposed projects to avoid and minimize effects on sensitive biological resources (e.g., riparian areas outside the USACE woody vegetation-free zones, wetlands, protected trees).

Effect VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction

Although the portion of the Sacramento River (0.59 acre) in the study area is located outside the construction zone, ground disturbance associated with program construction could potentially result in the placement of fill materials into the Sacramento River. This effect is potentially significant because if fill materials enter the Sacramento River, the proposed project would have adverse significant effect on a water of the U.S. that is subject to USACE regulation under CWA. Implementation of mitigation measures VEG-MM-4, VEG-MM-5, and VEG-MM-6, described above, would ensure that The Rivers APA would not have an adverse significant effect on the Sacramento River.

Effect VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction

In addition to the riparian habitat noted in Effect Veg-3, there may be some trees within the construction zone that meet the definition of heritage or landmark trees. However, they have not been formally surveyed and therefore still have the potential to be protected under the City's Tree Preservation Ordinance. If they are outside the construction zone, ground disturbance associated with the construction of levee improvements could potentially result in the disturbance of protected trees. Implementation of program mitigation measures VEG-MM-4, VEG-MM-5, VEG-MM-6, described above, and VEG-MM-7, VEG-MM-9, and VEG-MM-10, below, would ensure that the Rivers APA would not have a significant effect on trees that are potentially protected under the local ordinance.

Mitigation

Mitigation Measure VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources

WSAFCA will redesign proposed projects to avoid and minimize effects on sensitive biological resources (e.g., riparian areas outside the USACE woody vegetation-free zones, wetlands, protected trees).

Mitigation Measure VEG-MM-9: Conduct a Tree Survey

WSAFCA will retain a certified arborist to conduct a tree survey to identify protected trees in the study area. The arborist will document the results of the tree survey in a report that includes the location, species, size (diameter at breast height), overall health, and dripline diameter of the trees. If the arborist's survey does not identify any protected trees that would be removed or damaged as a

result of the proposed program, no additional mitigation would be necessary. If protected trees are present, WSAFCA will implement Mitigation Measure VEG-MM-10.

Mitigation Measure VEG-MM-10: Compensate for Loss of Protected Trees

WSAFCA will apply for a tree permit for the removal of any protected trees during construction. WSAFCA will replace trees that must be removed with trees at or near the location of the effect or another location within West Sacramento approved by the City's tree administrator. WSAFCA will also replace the replacement tree if it dies within 3 years of the initial planting. Replacement is not required if a tree is removed because it poses a risk, hosts a plant parasite, or is otherwise an undesirable species or specimen at the discretion of the City's tree administrator.

Replacement trees are required at a ratio of 1:1 (i.e., 1-inch diameter of replacement plant for every 1-inch diameter of tree removed). Trees may also be mitigated through payment of an in-lieu fee, which will be used to purchase and plant trees elsewhere in West Sacramento. Mitigation will be subject to approval by the City's tree administrator and may consider species affected, replacement species, location, health and vigor, habitat value, and other factors to determine fair compensation for tree loss.

Effect VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction

Invasive plants are already present in the project area. However, construction activities associated with construction could introduce new invasive plants or contribute to the spread of existing invasive plants to un-infested areas outside the project area. Invasive plants or their seeds may be dispersed by construction equipment if appropriate prevention measures are not implemented. The introduction or spread of invasive plants as a result of the proposed project could have a significant effect on sensitive natural communities within and outside the project area by displacing native flora. The implementation of one or more of the BMPs described in the environmental commitment to avoid or minimize the spread or introduction of invasive plant species (described in detail in Section 2.9 of Chapter 2, Alternatives) will ensure that the proposed project would not have a significant effect on sensitive natural communities from the introduction or spread of invasive plants.

5.10.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on vegetation and wetlands. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VEG-3: Disturbance of Removal of Riparian Vegetation as a Result of Program Construction	Significant	Less than significant	VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources
VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor
VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone VEG-MM-6: Retain a Biological Monitor VEG-MM-7: Redesign Proposed Projects to Avoid and Minimize Effects on Sensitive Biological Resources VEG-MM-9: Conduct a Tree Survey VEG-MM-10: Compensate for Loss of Protected Trees
VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction	Less than significant	N/A	

Effect VEG-3: Disturbance or Removal of Riparian Habitat as a Result of Program Construction

The construction activities associated with The Rivers Alternative B would result in the loss of 2.07 acres of Great Valley valley oak riparian forest (a sensitive natural community). These effects result from the riparian habitat being located within the project disturbance footprint (i.e., the construction zone) and compliance with the USACE policy regarding vegetation on levees. This effect is significant. Implementation of program mitigation measures VEG-MM-1, VEG-MM-4, VEG-MM-5, VEG-MM-6, and VEG-MM-7, described above under The Rivers APA, would reduce this effect to a less-than-significant level.

Effect VEG-4: Loss of Wetlands and Waters of the United States as a Result of Program Construction

Although the portion of the Sacramento River (0.59 acre) in the study area is located outside the construction zone, ground disturbance associated with program construction could potentially result in the placement of fill materials into the Sacramento River. This effect is potentially significant because if fill materials enter the Sacramento River, the proposed project would have adverse significant effect on a water of the U.S. that is subject to USACE regulation under CWA. Implementation of program mitigation measures VEG-MM-4, VEG-MM-5, and VEG-MM-6, described above under the Rivers APA would ensure that The Rivers Alternative B would not have an adverse significant effect on the Sacramento River.

Effect VEG-5: Disturbance or Removal of Protected Trees as a Result of Program Construction

This effect is the same as that described above under The Rivers APA. The disturbance or removal of protected trees a result of project construction could have a significant effect. Implementation of program mitigation measures VEG-MM-4, VEG-MM-5, VEG-MM-6, VEG-MM-7, VEG-MM-9, and VEG-MM-10, would ensure that the Rivers Alternative B would not have a significant effect on trees that are potentially protected under the local ordinance.

Effect VEG-6: Introduction or Spread of Invasive Plants as a Result of Program Construction

This effect is the same as that described above under The Rivers APA. The introduction or spread of invasive plants as a result of the proposed project could have a significant effect on sensitive natural communities within and outside the project area by displacing native flora. The implementation of one or more of the BMPs described in the environmental commitments to avoid or minimize the spread or introduction of invasive plant species (described in detail in Section 2.9 of Chapter 2, Alternatives) will ensure that the proposed project would not have a significant effect on sensitive natural communities from the introduction or spread of invasive plants.

Section 5.11

Fisheries and Aquatic Resources—The Rivers Early Implementation Project

5.11.1 Affected Environment

This section describes the affected environment for fisheries and aquatic resources in The Rivers EIP project area, including the regulatory and environmental setting.

5.11.1.1 Regulatory Setting

5.11.1.1.1 Federal

The following Federal policies related to fisheries and aquatic resources may apply to implementation of The Rivers EIP. Please see the program information in Section 3.9.2.1, Regulatory Setting, for a more complete discussion of the relevance of these regulations to fisheries and aquatic resources.

- Endangered Species Act
- Clean Water Act
- Magnuson-Stevens Fishery Conservation and Management Act

5.11.1.1.2 State

The following state regulations or agencies would govern the implementation of The Rivers EIP. Please see Section 3.9.2.1, Regulatory Setting, for a more complete discussion.

- California Endangered Species Act
- California Fish and Game Code Section 1600: Streambed Alteration Agreements

5.11.1.1.3 Local

The following local regulations or agencies would govern the implementation of The Rivers EIP. Please see Section 3.9.2.1, Regulatory Setting, for a more complete discussion.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*
- *Solano County General Plan*

5.11.1.2 Environmental Setting

5.11.1.2.1 Study Area

The Rivers EIP project area is located on the Sacramento River North Levee. The site has Great Valley oak riparian forest habitat lining the bank. The Sacramento River channel adjacent to the site

provides migratory and temporary rearing habitat for anadromous fish such as steelhead, Chinook salmon, river lamprey, and green sturgeon. Native fish, such as delta smelt and Sacramento splittail, also may spawn in the Sacramento River within the study area along shallow river margins and on adjacent floodplain habitat, when available.

5.11.2 Environmental Consequences

This section describes the environmental consequences relating to fisheries and aquatic resources for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.9.3.3, Effects and Mitigation Measures.

5.11.2.1 Assessment Methods

To prepare for the field surveys and analysis of the potential effects of the proposed program on fish species, fisheries biologists reviewed existing resource information related to the study area to evaluate whether sensitive habitats and special-status fish species are known from or could occur in the study area. The information reviewed included the following sources:

- a USFWS list of endangered, threatened, and proposed species for the Sacramento West, Clarksburg, Liberty Island, and Rio Vista USGS 7.5-minute quadrangle and Sacramento and Yolo Counties (U.S. Fish and Wildlife Service 2009); and
- published and unpublished documents and reports pertaining to the study area.

A reconnaissance-level survey of the study area was conducted by an ICF International fisheries biologist on October 26, 2007. During the survey, fish habitat was identified and evaluated for its ability to support special-status fish species.

The key effects were identified and evaluated based on the environmental characteristics of The Rivers EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

5.11.2.2 Determinations of Effects

For this analysis, an effect pertaining to special-status fish species and their habitats was considered adverse under NEPA or significant under CEQA if it would result in any of the following environmental effects, which are based on professional practice and CEQA Guidelines Appendix G (14 CCR 15000 *et seq.).*

Assessment species are selected based on listing under the ESA and/or CESA. An effect was considered adverse under NEPA and significant under CEQA if program actions would substantially reduce the abundance and distribution of the identified important fish species. Additionally, significant effects may occur if the project alternatives would result in:

- substantial interference with the movement of any resident or migratory fish species;
- substantial long- or short-term loss of habitat quality or quantity;

- substantial adverse effects on rare or endangered species, candidate species, other special-status species, or habitat of the species; or
- substantial adverse effects on fish communities or species protected by applicable environmental plans and goals.

5.11.2.2.1 Effect Assumptions

The determination of significance requires that:

- environmental conditions are measurably changed by the project,
- the change in environmental conditions significantly affects a species or its habitat,
- the change in environmental conditions is permanent or ongoing or affects a substantial proportion of the species population, or
- species population abundance is likely reduced, including a short-term reduction.

5.11.2.2.2 Effect Mechanisms

The assessment of effects considers the occurrence and potential occurrence of species and life stages relative to the magnitude, timing, frequency, and duration of program activities. Species habitat attributes potentially affected by construction activities include rearing habitat area and migration habitat conditions. Short-term effects on fish species attributable to bank protection activities include water quality effects and noise and disturbance. Long-term effects on fish habitat include loss of aquatic vegetation and SRA cover. This evaluation of effects on special-status fish species was based on the analysis of the proposed levee treatments.

Short-term construction effects are evaluated qualitatively based on general knowledge of the physiological tolerances and behavioral responses of listed fish species to potential increases in turbidity and suspended sediment, noise, and contaminants.

5.11.3 Effects and Mitigation Measures

5.11.3.1 No Action Alternative

The No Action Alternative would consist of the continuation of the existing deficiencies along the portion of the Sacramento River North Levee reach encompassed by The Rivers EIP project area (i.e., no levee improvements would be implemented to meet the minimum level of acceptable flood protection). Current levee operations and maintenance activities would continue. No construction-related release of contaminants would occur, and no noise and disturbance to special-status fish species or construction-related loss of habitat for special-status fish species would occur. The current levee maintenance activities, including mowing and application of herbicides, would continue.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to under-seepage, slope stability, or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the magnitude described in the Fisheries and Aquatics program analysis (Section 3.9.3.3.1). In summary, those effects could result in the displacement of

fish into flooded areas and the potential for stranding and mortality. In addition, significant water quality effects could result from the release of hazardous materials during a flooding event, which could lead to stress and direct mortality or significantly affect migration, spawning and rearing habitat of fish species. Emergency clean-up and earth-moving activities could also result in an increase in sediment and turbidity and the release of hazardous materials into the Sacramento Rivers and the Delta, and adjacent waterways that significantly affect migration, spawning or rearing habitat, or result in direct mortality of special status fish species. Given the unpredictable nature of emergency clean-up activities, is it likely that implementation of BMPs and measures to reduce effects on fish would not be possible. All of these effects would be considered significant.

5.11.3.2 The Rivers Applicant Preferred Alternative

Under The Rivers APA, construction activities would occur approximately 150 feet or more from the Sacramento River channel. Riparian trees would be removed and some nonnative understory vegetation would be trimmed and removed to construct flood and recreation program elements. This vegetation is approximately 100 to 150 feet from the Sacramento River and does not support SRA habitat.

Implementation of The Rivers APA would result in the following effects on fisheries and aquatic resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	
Effect FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	
Effect FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction	Less than significant	N/A	

Effect FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction

The proposed project involves earth moving activities that could cause erosion and soil disturbance, subsequently resulting in sediment transport and delivery to aquatic habitats. Increases in sedimentation and turbidity have been shown to affect fish physiology, behavior, and habitat. However, the potential for adverse effects on fish from an increase in turbidity and sedimentation is low because the construction activities would be conducted during the typical construction season, which is outside the principal spawning and migration season, and fish abundance is typically low. Should migratory adult or juvenile salmonids be present, such species would be expected to bypass channel reaches with elevated turbidity and sediment levels because a sufficient portion of the channel's width (i.e., zone of passage) would remain unaffected. In addition, the implementation of the environmental commitment of an erosion and sediment control plan would minimize any increase in sedimentation. Therefore, this effect would be considered less than significant.

Effect FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction

Construction activities for the proposed project may involve storage, use, or discharge of toxic and other harmful substances near the Sacramento River. Construction activities will involve the use of heavy equipment, cranes, compactors, and other construction equipment that uses petroleum products (e.g., fuels, lubricants, hydraulic fluids, coolants). All of these materials may be toxic to fish and other aquatic organisms. Construction activities will occur during the typical construction season, which is outside the principal spawning and migration season, and fish abundance is typically low. However, accidental spills of construction materials such as concrete, fuels, oils, and coolants could occur in adjacent wetlands or small drainage ditches that may drain to adjacent water bodies or the river. WSAFCA and its contractor will adhere to environmental commitments to implement an SWPPP and an SPCCP, and a BSSCP, as described in Section 2.9 of Chapter 2, Alternatives, which would make any construction-related effects on water quality (and fish or fish habitat) less than significant. If a spill were to occur, the SPCCP and BSSCP would be followed and Mitigation Measure WQ-MM-1, Implement Measures to Maintain Surface Water Quality and Groundwater Quality (as described in Section 5.5, Water Quality and Groundwater Resources), would be implemented to ensure water quality is returned to baseline conditions.

Effect FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction

Construction-related short-term effects on fish would include effects related to noise, vibrations, artificial light, and other physical disturbances caused by heavy equipment operation. These types of physical disturbances can disrupt or delay normal activities, or cause injury or mortality. The potential magnitude of effects depends on a number of factors, including the type and intensity of the disturbance, proximity of the action to the water body, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities.

Construction activities for the proposed project are at a distance from the Sacramento River that these types of effects would be unlikely. In addition, construction-related noise levels are not expected to cause delay or adversely affect upstream or downstream migration of salmon, steelhead, and other migratory species for the reasons listed below.

- Construction would be limited to the typical construction season and during periods of low abundance, and outside the principal spawning and migration season. Typical construction season generally corresponds to the dry season, but WSLIP construction may occur outside the limits of the dry season, only as allowed by applicable permit conditions.
- Migratory and resident fish would likely move upstream, downstream, or laterally to an unaffected portion of the river in response noise or disturbance and would therefore be unaffected.
- If present, migratory species, such as adult and juvenile salmonids, would be expected to bypass channel reaches with noises or disturbances because a sufficient portion of the channel's width (i.e., zone of passage) would remain unaffected.

5.11.3.3 The Rivers Alternative B

Under The Rivers Alternative B, riparian trees would be removed and some nonnative understory vegetation would be trimmed and removed to construct flood and recreation program elements and to comply with USACE vegetation policy. This vegetation is approximately 100 to 150 feet from the Sacramento River and does not support SRA habitat.

Implementation of The Rivers Alternative B would result in the following effect on fisheries and aquatic resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	
Effect FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction	Less than significant	N/A	
Effect FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction	Less than significant	N/A	

Effect FISH-3: Increase in Sedimentation and Turbidity in Adjacent Water Bodies as a Result of Construction

This effect would be the same as described above under The Rivers APA. The potential for adverse effects on fish from an increase in turbidity and sedimentation is low because the construction activities will be conducted during the typical construction season when fish abundance is low and outside the principal spawning and migration season. In addition, the implementation of the environmental commitment of an erosion and sediment control plan would minimize any increase in sedimentation. Therefore, this effect would be considered less than significant.

Effect FISH-4: Release of Contaminants into Adjacent Water Bodies as a Result of Construction

This effect would be the same as described above under The Rivers APA. WSAFCA and its contractor will adhere to environmental commitments to implement an SWPPP and an SPCCP, and a BSSCP, as described in Section 2.9 of Chapter 2, Alternatives, which would make any construction-related effects on water quality (and fish or fish habitat) less than significant.

Effect FISH-5: Noise and Disturbance of Special-Status Fish Species as a Result of Construction

This effect would be the same as described above under The Rivers APA. It is unlikely that construction activities for the proposed project would cause short-term effects on fish because of the project location's distance from the Sacramento River and the typical low abundance of fish in the river during the construction season. This effect is considered less than significant.

Section 5.12
Wildlife—
The Rivers Early Implementation Project

5.12.1 Affected Environment

This section describes the affected environment for wildlife resources in The Rivers EIP project area, including regulatory and environmental setting.

5.12.1.1 Regulatory Setting

5.12.1.1.1 Federal

The following Federal policies related to wildlife resources may apply to The Rivers EIP. Please see Section 3.10.2.1, Regulatory Setting, for a more complete description of each policy

- Federal Endangered Species Act
- Section 7: ESA Authorization Process for Federal Actions
- Section 9: ESA Prohibitions
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- Federal Endangered Species Act

5.12.1.1.2 State

- California Endangered Species Act
- California Fish and Game Code

5.12.1.1.3 Local

- City of West Sacramento General Plan
- Yolo County General Plan

5.12.1.2 Environmental Setting

This section discusses the environmental setting related to wildlife in the study area for The Rivers EIP (defined below), including the methods used to evaluate wildlife habitat including vegetation and wetland conditions, a description of existing land cover types in the project study area, identification of waters of the United States (including wetlands), and discussions of the special-status wildlife species that are known to occur in the project region.

5.12.1.2.1 Study Area

The Rivers EIP study area is approximately 4,400 feet in length and is located on the Sacramento River North Levee, just north of the confluence of the Sacramento and American Rivers, including part of The Rivers residential development. For the purposes of the wildlife analysis, the study area consists of the project area plus an approximate 100-foot-wide buffer zone that accounts for potential indirect effects on VELB. The study area encompasses portions of the Sacramento River North Levee with a majority of the study area consisting of the levee itself. The topography of the portion of the study area adjacent to the levee is relatively level. Elevations in the study area range from approximately 20 to 26 feet above mean sea level. The majority of the study area on the landside of the levee consists of residential development and a school. A single row of houses is located on top of the levee in the southern portion of the study area. The waterside of the levee is undeveloped and supports a well-developed riparian corridor.

5.12.1.2.2 Field Surveys

Pre-Field Investigation

An ICF Jones & Stokes biologist reviewed CNDDB (2009b) and USFWS (2009) species lists and aerial photographs for the study area prior to field surveys.

Reconnaissance-Level Site Visits

An initial general survey of the project area was conducted by ICF Jones & Stokes wildlife biologists on November 29, 2007. The survey was conducted by walking around the study area to visually assess potential wildlife resources. Focused surveys of the project area, including an elderberry shrub (the host plant for VELB) survey, were conducted by ICF Jones & Stokes biologists on January 9, 2009. During all surveys wildlife habitat uses associated with land cover types were identified, habitats were evaluated for their ability to support special-status wildlife species, and all wildlife species observed were recorded (Table 5.12-1).

Table 5.12-1. Wildlife Species Observed in The Rivers EIP Study Area

Common Name	Scientific Name
Birds	
Acorn woodpecker	*Melanerpes formicivorus*
American crow	*Corvus brachyrhynchos*
American Goldfinch	*Carduelis tristis*
American kestrel	*Falco sparverius*
Black phoebe	*Sayornis nigricans*
Brewer's blackbird	*Euphagus cyanocephalus*
Bushtit	*Psaltriparus minimus*
California towhee	*Pipilo crissalis*
Canada goose	*Branta canadensis*
Dark-eyed junco	*Junco hyemalis*
European starling	*Sturnus vulgaris*
Golden-crowned sparrow	*Zonotrichia atricapilla*
Gull sp.	*Larus* sp.

Common Name	Scientific Name
House wren	*Troglodytes aedon*
Killdeer	*Charadrius vociferus*
Mallard	*Anas platyrhynchos*
Mourning dove	*Zenaida macroura*
Northern flicker	*Colaptes auratus*
Red-tailed hawk	*Buteo jamaicensis*
Rock dove	*Columba livia*
Snowy egret	*Egretta thula*
Spotted towhee	*Pipilo erythrophthalmus*
Turkey vulture	*Cathartes aura*
Western meadow lark	*Sturnella neglecta*
Western scrub jay	*Aphelocoma californica*
White-crowned sparrow	*Zonotrichia leucophrys*
Yellow-rumped warbler	*Dendroica coronata*
Mammals	
Black-tailed jack rabbit	*Lepus californicus*

Elderberry Surveys

Elderberry shrub surveys were conducted for the majority of the study area where flood improvements and the recreation trail on the crown of the levee occur. A protocol level survey of the construction areas for pedestrian trail foot paths and landings leading to the Sacramento River has not yet been conducted. However, the presence of elderberry shrubs in these areas was noted during reconnaissance level site visits. Surveys of these areas will be completed prior to project implementation.

Elderberry shrub surveys consisted of walking through the project area and mapping, with a GPS, all elderberry shrubs (and shrub clusters) within 100 feet of portions of the proposed construction area (as noted above) in accordance with the USFWS Conservation Guidelines for the VELB (U.S. Fish and Wildlife Service 1999a). Other information recorded for each shrub included number of stems between 1 and 3 inches, 3 and 5 inches, and greater than 5 inches in diameter; whether each stem 1 inch or more in diameter is located in a riparian or non-riparian area; approximate height and width of the elderberry shrub; presence of VELB exit holes; and dominant vegetation that is associated with the elderberry shrub.

5.12.1.2.3 Wildlife Habitat—Land Cover Type Associations

The study area contains the following land cover types: Great Valley valley oak riparian forest, non-native annual grassland, and unvegetated/vacant/developed areas. Additionally, the Sacramento River (open water) occurs within 50 feet of portions of the study area; therefore, a discussion of this habitat is also included. These land cover types are discussed below with respect to the habitat they provide for wildlife. A detailed description of each of these types, including the dominant plants contained within each type, is in Section 3.8, Vegetation and Wetlands. These land cover types are shown in Figure 5.10-1 along with acreages of these types occurring within the construction limit, staging area, and larger study area.

Great Valley Valley Oak Riparian Forest

In the study area, riparian forest occurs along the Sacramento River North Levee adjacent to the Sacramento River. The overstory of the riparian habitat consists of mature, well-established trees: Fremont cottonwood (*Populus fremontii* ssp*. fremontii*), valley oak (*Quercus lobata*), black willow (*Salix gooddingii*), and box elder (*Acer negundo* var. *californicum*) with a shrub layer of smaller trees and shrubs. Elderberry shrubs (*Sambucus mexicana*), which are the host plant of VELB, were observed within this community.

Overstory trees may be used for nesting and roosting by numerous raptors, including Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), great horned owl (*Bubo virginianus*), Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*) as well as the herons and egrets mentioned below as foraging in open water areas. Overstory trees also provide suitable habitat for song birds such as Bullock's oriole (*Icterus bullockii*), yellow-rumped warbler (*Dendroica coronata*), tree swallow (*Tachycineta bicolor*), and western scrub jay (*Aphelocoma californica*). Riparian forest also provides important foraging habitat for resident, migratory, and wintering songbirds. The understory of riparian woodlands provide habitat for mammals, including various species of rodents, raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Areas containing large, dense shrubby vegetation dominated by willow or blackberry may support tricolored blackbird (*Agelaius tricolor*). Riparian forests also provide cover and foraging habitat for reptiles and amphibians, such as terrestrial garter snake (*Thamnophis elegans*), gopher snake (*Pituophis catenifer*), Pacific tree frog (*Hyla regilla*), and western toad (*Bufo boreas*). Suitable areas in the understory may also be used as nesting habitat for western pond turtles (*Actinemys marmorata*).

Non-Native Annual Grassland

Non-native annual grassland in the study area occurs on and adjacent to the Sacramento River North Levee, and consists of non-native annual grasses and forbs.

Annual grasslands provide nesting and foraging habitat for several species of songbirds, including savanna sparrow (*Passerculus sandwichensis*), white-crowned sparrow (*Zonotrichia leucophrys*), and western meadowlark (*Sturnella neglecta*); and foraging habitat for several species of raptors, including red-tailed hawk, white-tailed kite, northern harrier, great-horned owl, and Swainson's hawk. California ground squirrels commonly occur in annual grassland habitat. Their burrows provide important nesting habitat for western burrowing owls (*Athene cunicularia hypugea*). Reptiles found in these habitats include California kingsnake, gopher snake, and western rattle snake (*Crotalus viridis*).

Unvegetated/Vacant/Developed

The unvegetated/vacant/developed portions of the study area consist of unvegetated portions of the Sacramento River North Levee, paved and unpaved roads and trails, and residential housing. These areas likely support common wildlife species including house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), Brewer's blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrhynchos*), mourning dove, rock dove (*Columba livia*), Virginia opossum (*Didelphis virginiana*), California ground squirrel, and California meadow vole, to name a few. Scattered landscape trees and shrubs associated with this area may provide nesting habitat for the above-listed common birds.

Open Water

Open water habitat adjacent to the study area consists of the Sacramento River. Open water provides breeding, foraging, and migration habitat for numerous wildlife species. Mammal species commonly known to use perennial aquatic open water habitats include river otter, which uses these areas for foraging and escape cover, and muskrat, which may use deepwater areas as migration corridors between suitable foraging areas. Open water areas also provide essential foraging habitat for wading birds including great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*), numerous waterfowl species including mallard (*Anas platyrhynchos*), ruddy duck (*Oxyura jamaicensis*), bufflehead (*Bucephala albeola*), other water birds including eared grebe (*Podiceps nigricollis*), double-crested cormorants (*Phalacrocorax auritus*), American white pelicans (*Pelecanus erythrorhynchos*), and land birds including black phoebe (*Sayornis nigricans*) and belted kingfisher (*Megaceryle alcyon*). These areas also provide rearing habitat, escape cover, and foraging habitat for reptiles and amphibians including western pond turtle (*Actinemys marmorata*), common garter snake (*Thamnophis sirtalis*), bullfrog (*Rana catesbeiana*), Pacific tree frog (*Hyla regilla*), and western toad (*Bufo boreas*). The vegetated areas below the OHWM provide nesting habitat for numerous songbirds, including red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), and wading birds such as Virginia rail (*Rallus limicola*).

5.12.1.2.4 Special-Status Wildlife

Special-status wildlife species are animals that are legally protected under the ESA, CESA, or other regulations and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species definitions are included in the Program Environmental Setting section.

Based on the USFWS (2009) list for the quadrangle in the study area and Yolo County, a review of CNDDB (2009b) occurrences within a 10-mile radius of the study area, and information collected during field surveys, 35 special-status wildlife species were identified as having potential to occur in the project area (Table 5.12-2). Of these, 21 have low to no potential to occur in the study area because the study area is outside the species' known range or suitable habitat is absent from the study area. The remaining 14 wildlife species identified as having potential to occur in the study area include the VELB, giant garter snake, Western pond turtle, Swainson's hawk, white-tailed kite, loggerhead shrike, tricolored blackbird, purple martin, bank swallow, northern harrier, western burrowing owl, hoary bat, western red bat, and pallid bat.

The protection status, distributional range, and habitat requirements for these species are described in the Program Environmental Setting section. Information regarding species occurrence within a 10-mile radius of the study area and the suitability of the study area for a particular species is presented below.

Table 5.12-2. Special-Status Wildlife Species with Potential to Occur in The Rivers EIP Study Area

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Invertebrates				
Delta green ground beetle *Elaphrus viridus*	T/–	Restricted to Olcott Lake and other vernal pools at Jepson Prairie Preserve, Solano County	Sparsely vegetated edges of vernal lakes and pools; occur up to 250 feet from pools	None. Study area is outside of the species' range.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/–/–	Stream side habitats below 3,000 feet throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant	High. Known occurrences within a mile of the study area.
Conservancy fairy shrimp *Branchinecta conservatio*	E/–/–	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	None. Study area is outside of the species' range.
Vernal pool fairy shrimp *Branchinecta lynchi*	T/–/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	None. No suitable habitat in the study area.
Vernal pool tadpole shrimp *Lepidurus packardi*	E/–/–	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	None. No suitable habitat in the study area.
Lange's metalmark butterfly *Apodemia mormo langei*	E/–/–	Once found throughout the Antioch Dunes; range now reduced to less than 10 acres of Antioch Dunes in Contra Costa County	Limited to dense to moderately dense patches of food plant, wild buckwheat, in stabilized sand dunes	None. Study area is outside of the species' range.
Amphibians				
California tiger salamander *Ambystoma californiense*	T/C/–	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.	Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	None. No suitable habitat in the study area.
California red-legged frog *Rana aurora draytonii*	T/SSC/–	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County	Permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	None. The study area is outside of this species current known range. This species is believed to be extirpated from the valley floor.

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Reptiles				
Silvery legless lizard *Anniella pulchra pulchra*	–/SSC/–	Along the Coast, Transverse, and Peninsular Ranges from Contra Costa County to San Diego County with spotty occurrences in the San Joaquin Valley	Habitats with loose soil for burrowing or thick duff or leaf litter; often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas	Low. No CNDDB occurrences within 10 miles of the study area. Potential habitat in the study area.
Giant garter snake *Thamnophis couchi gigas*	T/T/–	Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno	Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	Low to None. CNDDB occurrences within three miles of study area. No suitable habitat within study area.
Western pond turtle *Actinemys marmorata*	–/SSC/–	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	Moderate. Species observed within ponds 3 miles south of study area along South River Road. Suitable habitat within study area.
Birds				
Double-crested cormorant *Phalacrocorax auritus* (rookery site)	–/SSC/–	Winters along the entire California coast and inland over the Coast Ranges into the Central Valley from Tehama County to Fresno County; a permanent resident along the coast from Monterey County to San Diego County, along the Colorado River, Imperial, Riverside, Kern and King Co.s, and the islands off San Francisco; breeds in Siskiyou, Modoc, Lassen, Shasta, Plumas, and Mon Co.s; also breeds in the San Francisco Bay Area and in Yolo and Sacramento Counties	Rocky coastlines, beaches, inland ponds, and lakes; needs open water for foraging, and nests in riparian forests or on protected islands, usually in snags	Low. No CNDDB nesting records within 10 miles of the study area. No nesting or foraging habitat within study area.

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
White-faced ibis *Plegadis chihi* (rookery site)	–/SSC	Both resident and winter populations on the Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds at Honey Lake, Lassen County, at Mendota Wildlife Management Area, Fresno County, and near Woodland, Yolo County.	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	Low. No CNDDB nesting records within 10 miles of the study area. No suitable nesting or foraging habitat within study area.
California black rail *Laterallus jamaicensis coturniculus*	–/T/–	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties.	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations.	None. No CNDDB nesting records within 10 miles of the study area. No suitable habitat within study area.
California clapper rail *Rallus longirostris obsoletus*	E/E/–	Marshes around the San Francisco Bay and east through the Delta to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickle-weed; feeds on mollusks removed from the mud in sloughs	None. Study area is outside of the species' range.
Mountain plover *Charadrius montanus*	PT/SSC	Does not breed in California; in winter, found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grain fields	None. Study area is outside of the species' breeding range, unlikely to forage in study area.
Western snowy plover (inland population) *Charadrius alexandrinus nivosus*	–/SSC	Nests at inland lakes throughout northeastern, central, and southern California, including Mono Lake and Salton Sea	Barren to sparsely vegetated ground at alkaline or saline lakes, reservoirs, ponds and riverine sand bars; also along sewage, salt-evaporation, and agricultural waste-water ponds	None. No suitable nesting or foraging habitat in the study area.

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Northern harrier *Circus cyaneus*	–/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	Moderate. No CNDDB nesting records within 10 miles of the study area. Marginally suitable nesting habitat in study area. Suitable foraging habitat in grasslands adjacent to levee.
White-tailed kite *Elanus leucurus*	–/ FP/–	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	High. CNDDB nesting records within 3 miles of study area. Suitable nesting and foraging habitat in study area.
Swainson's hawk *Buteo swainsoni*	–/T/–/–	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.	Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields.	High. CNDDB nesting records within study area.
Western burrowing owl *Athene cunicularia hypugea*	–/SSC/–	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High. CNDDB nesting records within a mile of the study area. Suitable nesting and foraging habitat in study area.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	–/E	Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers	Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant	None. No suitable nesting habitat in the study area; forests in study area are dominated by valley oak and contain abundant scrub jays.
Loggerhead shrike *Lanius ludovicianus*	–/SSC/–	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Moderate. No CNDDB nesting records within 10 miles of the study area. Suitable nesting and foraging habitat in study area.

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Tricolored blackbird *Agelaius tricolor*	–/SSC/–	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	Low. CNDDB nesting records 2 miles south of the study area. No suitable nesting habitat in study area; marginally suitable foraging habitat in grasslands adjacent to levee.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	–/SSC/–	Locally numerous in the Klamath Basin, Modoc Plateau, Great Basin desert, and large mountain valleys in northeastern California; and in the San Joaquin Valley. Common breeders in the Colorado River valley, the Salton Sink, and the western Mojave desert; scarce in the Sacramento Valley and along the southern coast in Los Angeles, Riverside, and San Bernardino counties.	Nest in marshes with tall emergent vegetation, such as tules or cattails, generally in open areas and edges over relatively deep water. Breeding marshes often on edges of deep water bodies such as lakes, reservoirs, and or larger ponds.	None. CNDDB nesting records approximately 10 miles south of the study area. No suitable nesting or foraging habitat in the study area.
Purple martin *Progne subis*	–/SSC/–	Coastal mountains south to San Luis Obispo County, west slope of the Sierra Nevada, and northern Sierra and Cascade ranges. Absent from the Central Valley except in Sacramento. Isolated, local populations in southern California	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges	Moderate. CNDDB nesting records under nearby freeway approximately 2 miles southeast of the study area. Suitable nesting habitat in study area.
Bank swallow *Riparia riparia*	–/T/–	Occurs along the Sacramento River from Shasta County to Sacramento County, along the Feather and lower American Rivers, in the Owens Valley; and in the plains east of the Cascade Range in Modoc, Lassen, and northern Siskiyou Counties. Small populations near the coast from San Francisco County to Monterey County	Nests in bluffs or banks, usually adjacent to water, where the soil consists of sand or sandy loam	Low. CNDDB nesting records approximately 5 miles southeast of the study area. No suitable nesting habitat in the study area.

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	–/SSC/–	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover	None. Study area is outside of the species' range.
Grasshopper sparrow *Ammodramus savannarum*	–/SSC/–	Summer resident in the foothills of the Sierra Nevada and Coast Range from Mendocino and Trinity counties south to San Diego County.	Dry, dense grasslands with a variety of grasses and tall forbs and scattered shrubs.	Low. No CNDDB nesting records within study area. Potential nesting habitat within study area.
Suisun song sparrow *Melospiza melodia maxillaris*	–/SSC/–	Restricted to the extreme western edge of the Delta, between the cities of Vallejo and Pittsburg near Suisun Bay	Brackish and tidal marshes supporting cattails, tules, various sedges, and pickleweed	None. Study area is outside of the species' range.
Mammals				
Hoary bat *Lasurius cinerius*	–/SSC/–	Occurs throughout California from sea level to 13,200 feet.	Primarily found in forested habitats. Also found in riparian areas and in park and garden settings in urban areas. Day roosts within foliage of trees.	Moderate. Not reported to occur within study area; reported in CNDDB to occur approximately 2 miles of the study area. Suitable roosting habitat in study area.
Pallid bat *Antrozous pallidus*	–/SSC/FSS, WBWG: High priority	Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts	Moderate. Not reported to occur within study area; no CNDDB record reported to occur within 10 of the study area. Suitable roosting habitat in study area.
Western red bat *Lasiurus blossevillii*	–/–/FSS, WBWG: High priority	Scattered throughout much of California at lower elevations	Found primarily in riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Found in fruit orchards and sycamore riparian habitats in the central valley	Moderate. Not reported to occur within study area; no CNDDB record reported to occur within 10 of the study area. Suitable roosting habitat in study area.

Common and Scientific Names	Status Federal/ State/Other	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Salt marsh harvest mouse *Reithrodontomys raviventris*	E/E, FP	San Francisco, San Pablo, and Suisun Bays; the Delta	Salt marshes with a dense plant cover of pickle-weed and fat hen; adjacent to an upland site	None. Study area is outside of the species' range.
American badger *Taxidea taxus*	–/SSC/–	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground	Low. One historic record (1938) reported approximately 8 miles from the study area. Study area contains limited suitable habitat for this species.

Status explanations:

Federal

E = listed as endangered under the Federal Endangered Species Act.

T = listed as threatened under the Federal Endangered Species Act.

P = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

– = no listing.

State

E = listed as endangered under the California Endangered Species Act.

T = listed as threatened under the California Endangered Species Act.

FP = fully protected under the California Fish and Game Code.

SSC = species of special concern in California.

C = candidate for listing

– = no listing.

Western Bat Working Group (WBWG) Available: http://www.wbwg.org/spp_matrix.html)

High priority = species are imperiled or at high risk of imperilment

Moderate priority= this designation indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat

Low priority = While there may be localized concerns, the overall status of the species is believed to be secure.

1

Valley Elderberry Longhorn Beetle

Although no occurrences of VELB in the study area have been reported, there are numerous within 10 miles of the study area (California Natural Diversity Database 2009b). Three occurrences are located within 1 mile of the study area. Although not reported to occur in the study area, elderberry shrubs sized 1 inch or more at ground level are present in the study area and therefore VELB has potential to occur. See elderberry shrub survey map Figure 5.12-1 for locations of these shrubs.

Giant Garter Snake

There are no CNDDB (2009b) records for giant garter snakes in the study area, although there are numerous occurrences within 10 miles. The closest occurrence is located approximately 3miles from the study area in an agricultural drainage. This occurrence is labeled as sensitive and therefore provides minimal information about the occurrence location. There are approximately 25 other recorded occurrences within 10 miles of the study area, most of which are also labeled as sensitive and therefore no specific location information is available (California Natural Diversity Database 2009b).

The Sacramento River is the only aquatic habitat in close proximity to the study area. Giant garter snakes are known to utilize low gradient streams but the Sacramento River contains high flows that would not support giant garter snakes.

Western Pond Turtle

CNDDB (2009b) records do not indicate any western pond turtle occurrences in the study area. Pond turtles have been incidentally observed approximately 3miles southeast of the study area in ponds west of South River Road, by ICF Jones & Stokes biologists. Additionally, western pond turtle is recorded to occur 7 miles east of the study area in a drainage at the McClellan Air Force Base (California Natural Diversity Database 2009b).

The Sacramento River is the only aquatic habitat in close proximity to the study area. If present in the Sacramento River, pond turtles could use riparian habitat in the study area for winter hibernacula and nesting.

Swainson's Hawk

Swainson's hawk is known to nest in trees in and adjacent to the study area. The closest reported nest site is located in a cottonwood tree within 30 feet of the Sacramento River at RM 61.5. The nest site was last observed to be active in 1993 (California Natural Diversity Database 2009b). Grasslands in the study area are likely used as foraging habitat by this species.

White-Tailed Kite

There are no CNDDB (2009b) occurrences for white-tailed kite in the study area. Several nest sites are reported to occur within a 10-mile radius, the closest being a nest site within 3 miles of the study area along the American River (California Natural Diversity Database 2009b). Large trees within and adjacent to the study area provide suitable nesting habitat, and grasslands provide suitable foraging habitat.

Loggerhead Shrike

CNDDB (2009b) records do not indicate any loggerhead shrike occurrences within 10 miles of the study area. However, the study area is within the expected range for this species. Scattered trees and shrubs in the study area have potential to support nesting of this species and grasslands provide suitable foraging habitat.

Tricolored Blackbird

There are no CNDDB (2009b) occurrences for tricolored blackbird in the study area. Within 10 miles of the study area, CNDDB (2009b) indicated one tricolored blackbird nesting site, located approximately 2 miles south of the study area near the Port of Sacramento, in the vicinity of the Port North Levee. The birds were reported to be nesting in an area containing thistle and mustard in 1969 and 1974. The size of this population was not reported. Himalayan blackberry brambles and grasslands containing dense forbs in the study area provide suitable nesting habitat. Grasslands in the study area also contain suitable foraging habitat for this species.

Purple Martin

There are no CNDDB (2009b) occurrences for purple martin in the study area. The nearest CNDDB (2009b) occurrence for this species is for a colony nesting in weep holes under the I-5 freeway overpass at I Street approximately 2 miles east of the study area. Numerous other occurrences are reported within a 10-mile radius for colonies nesting under freeway or street overpasses. Suitable nesting habitat for this species occurs in the riparian forest areas in the study area.

Bank Swallow

There are no CNDDB (2009b) occurrences for this species in the study area. Numerous CNDDB nesting records for this species occur approximately 5 miles southeast of the study area along the American River. Additionally this species is recorded in CNDDB to nest approximately 14 miles north of the study area along the Sacramento River. Banks along the Sacramento River, located within and adjacent to the study area, are heavily vegetated with Himalayan blackberry, aquatic and upland grasses, and willows and do not provide suitable nesting habitat for bank swallow. The study area does not contain any potential nesting habitat for this species.

Northern Harrier

CNDDB (2009b) records do not indicate any northern harrier occurrences in the study area or within 10 miles of the study area. Annual grasslands in the study area provide suitable foraging habitat but would be unlikely to support nesting because a majority of the grassland habitat is within the levee itself.

Western Burrowing Owl

There are no CNDDB (2009b) occurrences for this species in the study area though numerous burrowing owl occurrences are reported within 10 miles of the study area. The closest recorded nesting record is within 1 mile of the site located 0.2 mile southwest of the intersection of Highway 84 and Harbor Boulevard, within the Sacramento River North Levee reach. Grasslands within and alongside the Sacramento River North Levee reach provide suitable nesting habitat where ground



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Figure 5.12-1
The Rivers Site: Elderberry Shrub Survey Map

squirrel burrows are present and open grassland areas near suitable nesting habitat provide suitable foraging habitat.

Special-Status Bats

There are no CNDDB (2009b) occurrences for these species in the study area. Within 10 miles of the study area, CNDDB (2009b) records indicate a hoary bat observation approximately2 miles south of the study area within the Sacramento River North Levee reach. CNDDB (2009b) records do not indicate any western red bat or pallid bat observations within 10 miles of the study area. Riparian forest in the study area provides suitable roosting habitat for these species, while the adjacent Sacramento River provides suitable foraging habitat.

5.12.2 Environmental Consequences

This section describes the environmental consequences relating to wildlife for the proposed The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.10.3.3, Effects and Mitigation Measures.

5.12.2.1 Assessment Methods

The effect analysis below is quantitative and is based on site-specific information. The mitigation measures described for potential effects on sensitive biological resources have not been developed through consultation with resource agencies (e.g., DFG, USFWS, and USACE) at this time but are based on standard agency guidance.

The key effects were identified and evaluated based on the environmental characteristics of The Rivers EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

5.12.2.1.1 Effects Mechanisms

The following project-related activities could affect wildlife resources in the study area. These types of direct and indirect effects were used to assess effects on wildlife resources.

Direct Effects

Direct effects on wildlife could be caused by the following actions:

- vegetation clearing (including trees), grading, excavating/trenching, placement of rock slope protection, and paving activities during construction;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site;
- short-term construction-related noise (from equipment); and

- degradation of water quality in drainages and wetlands, resulting from construction runoff containing petroleum products.

Indirect Effects

Indirect effects on wildlife could e caused by the following actions:

- permanently altering light and noise levels;
- altering hydrology;
- causing damage through toxicity associated with herbicides, insecticides, and rodenticides;
- introducing pet and human disturbance (including trash dumping);
- increasing habitat for native competitors or predators; and
- introducing invasive non-native species.

5.12.2.2 Determination of Effects

For this analysis, an effect pertaining to wildlife resources was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.).*

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or the USFWS;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan, natural communities conservation plan, or other approved local, regional, or state habitat conservation plan; or
- contribute to a substantial reduction or elimination of species diversity or abundance.

Qualitative relationships between environmental conditions and life stage survival or wildlife resources are the basis of the effect assessment. Cause and effect relationships are identified for assessment species, including the relationship between environmental conditions and habitat, and the effects of changes in habitat on survival.

The mitigation measures described for potential effects on sensitive biological resources have not been developed through formal consultation or coordination with resource agencies (e.g., DFG, USFWS, NMFS, and the USACE). As part of the environmental analysis for the project, WSAFCA will contact agencies as part of the environmental compliance process to determine specific compensatory mitigation for effects on wetlands, state- and federally listed species, and riparian habitats. Additional mitigation measures may also be identified as conditions of future action permits (e.g., a BO, Section 7 Incidental Take Statement, or Section 1602 Streambed Alteration Agreement).

5.12.3 Effects and Mitigation Measures

5.12.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects on wildlife, such as displacement or loss of habitat would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Wildlife program analysis (Section 3.10.3.3.1). In summary, these effects could include the physical displacement, mortality, or destruction of habitat for a significant number of special-status species.

Compliance with USACE's levee vegetation guidance could result in the removal of a substantial amount of vegetation, including vegetation that comprises mature oak woodland and supports wildlife populations (including special-status species). This effect could be considered significant.

5.12.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on wildlife resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)	Less than significant	N/A	
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zone WILD-MM-1: Document Special-Status Species and Their Habitats WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)	Significant	Less than Significant	VEG-MM-1: Compensate for the Disturbance or Removal of Riparian Habitat WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA

Effect	Finding	With Mitigation	Mitigation Measure
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Other Special-Status Birds)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Burrowing Owl)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA
WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Bats and Bat Roosts)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)	Significant	Less than significant	VEG-MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds
WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Other Common Species)	Less than significant	N/A	N/A
WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction	Less than significant	N/A	N/A

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (VELB)

In the study area, elderberry shrubs occur in the Sacramento River riparian corridor adjacent to the project construction limit. As shown in Table 5.12-3, below, and Figure 5.12-1, a total of 22 shrubs or shrub clusters are located within 100 feet of the project construction limit.

Complete avoidance of effects on VELB is assumed when a 100-foot buffer (from construction) is established around elderberry shrubs. Direct effects on VELB may generally occur when construction occurs within 20 feet of elderberry shrubs. Indirect effects on VELB may generally occur if elderberry shrubs are located from 20 to 100 feet of construction. There are no shrubs located within 20 feet of the construction limit. As shown in Table 5.12-3, 22 shrubs are located between 20 and 100 feet of the construction limit.

Table 5.12-3. Elderberry Shrub Survey Results—Riparian

Elderberry Shrub/Cluster Number	Number of Stems > 1 Inch and < 3 Inches	Number of Stems > 3 Inches and < 5 Inches	Number of Stems > 5 Inches	Total Number of Stems	Exit holes N/Y
Shrubs within Indirect Impact Area (shrubs > 20 ft but < 100 ft from construction limit)					
EB 150	2	1	0	3	N
EB 151	3	1	0	4	N
EB 152	1	0	1	2	N
EB 153	0	1	0	1	N
EB 154	7	1	0	8	N
EB 155	5	3	0	8	N
EB 156	14	0	0	14	N
EB 157	5	0	0	5	N
EB 158	5	0	0	5	N
EB 159	10	0	0	10	N
EB 160	20	0	0	20	N
EB 161	10	0	0	10	N
EB 162	4	0	0	4	N
EB 163	9	5	2	16	N
EB 164	1	0	0	1	N
EB 165	20	0	0	20	N
EB 166	5	2	0	7	N
EB 167	4	0	0	4	N
EB 168	10	2	0	12	N
EB 169	4	0	0	4	N
EB 170	9	0	0	9	N
EB 171	25	3	0	28	N
Total	**173**	**19**	**3**	**192**	**N/A**

WSAFCA has coordinated with the USFWS and agreed to protective measures for these shrubs. The following measures will be implemented to avoid and minimize effects to VELB:

- Before ground disturbance, all construction personnel will participate in a USFWS-approved worker environmental awareness program. A qualified biologist approved by the USFWS will inform all construction personnel about the life history of VELB and the importance of its host shrub, the elderberry. Proof of this instruction will be submitted to the USFWS.
- Protective buffer areas will be created for elderberry shrub clusters by the installation of approximately 1500 feet of K-rail fencing along the edge of the construction zone (See Figure 5-2). In the eastern portion of the project area, there are shrubs that lie within existing tree canopy. To protect these shrubs and avoid potentially damaging existing trees, an approximate 80-foot semi-circle of orange construction fencing will be installed adjacent to the construction zone in this portion of the study area (see Figure 5-2). Within buffer areas, signs will be posted along fencing for the duration of construction. The signs will contain the following information:

This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.

- Buffer area fences around elderberry shrubs/clusters will be inspected weekly by a qualified biologist during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs throughout construction. Biological inspection reports will be provided to the project lead and USFWS.
- WSAFCA will ensure that the project site will be watered down as necessary to prevent dust from becoming airborne and accumulating on elderberry shrubs in and adjacent to a project site.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Western Pond Turtle)

Although western pond turtle is not currently known to occur in the study area, there is potential for this species to utilize the riparian corridor adjacent to the Sacramento River for winter hibernacula and nesting. However, construction at the project area is designed to avoid the Sacramento River riparian corridor, thus avoiding effects on this species. Implementation of Mitigation Measures VEG-MM-4, VEG-MM-5, WILD-MM-1 and WILD-MM-2 would further ensure that this species would not be affected. This effect would be less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure VEG-MM-5: Install Construction Barrier Fencing to Protect Sensitive Biological Resources Adjacent to the Construction Zones

Mitigation Measure WILD-MM-1: Document Special-Status Wildlife Species and Their Habitat

WSAFCA will retain a qualified wildlife biologist to document the presence or absence of suitable habitat for special-status wildlife. The following steps will be implemented to document special-status wildlife and their habitats:

- **Review existing information**. The wildlife biologist will review existing information to develop a list of special-status wildlife species that could occur in the action area. The following information will be reviewed as part of this process: the USFWS special-status species list for the action region, DFG's CNDDB, previously prepared environmental documents, city and county general plans, habitat conservation plans and natural community conservation plans (if there are any adopted by the time the action is constructed), and USFWS-issued BOs for previous actions.
- **Coordinate with state and Federal agencies**. The wildlife biologist will coordinate with the appropriate agencies (DFG and USFWS) to discuss wildlife resource issues in the action region and determine the appropriate levels of survey necessary to document special-status wildlife and their habitats.
- **Conduct field studies**. The wildlife biologist will evaluate existing habitat conditions and determine what levels of biological survey may be required. The type of survey required will

depend on species richness, habitat type and quality, and the probability of special-status species occurring in a particular habitat type. Depending on the existing conditions in the action area and the proposed construction activity, one or a combination of the following levels of survey may be required:

- **Habitat assessment.** A habitat assessment determines whether suitable habitat is present. This type of assessment can be conducted at any time of year and is used to assess and characterize habitat conditions and determine whether return surveys are necessary. If no suitable habitat is present, no additional surveys will be required.
- **Conduct species-focused surveys.** Species-focused surveys (or target species surveys) will be conducted if suitable habitat is present for special-status wildlife and it is necessary to determine the presence or absence of the species in the action area. The surveys will focus on special-status wildlife species that have the potential to occur in the region. The surveys will be conducted during a period when the target species are present and/or active.
- **Conduct protocol-level wildlife surveys.** The program proponent will comply with protocols and guidelines issued by responsible agencies for certain special-status species. USFWS and DFG have issued survey protocols and guidelines for several special-status wildlife species that could occur in the study area, including (but not limited to) VELB, Swainson's hawk, western burrowing owl, and giant garter snake. The protocols and guidelines may require that surveys be conducted during a particular time of year and/or time of day when the species is present and active. Many survey protocols require that only a USFWS- or DFG-approved biologist perform the surveys. The program proponent will coordinate with the appropriate state or Federal agency biologist before initiation of protocol-level surveys to ensure that the survey results will be valid. Because some species can be difficult to detect or observe, multiple field techniques may be used during a survey period, and additional surveys may be required in subsequent seasons or years as outlined in the protocol or guidelines for each species.

Mitigation Measure WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan

Preconstruction surveys for western pond turtles in suitable aquatic habitat and associated upland areas will be conducted by a qualified biologist 2 weeks before and 24 hours prior to the start of construction activities. A survey will consist of three visits within a 2-week period, preferably during the appropriate time of year (March through October) and day (early morning) to maximize the chances of observing a turtle.

If a turtle is located within 100 feet of the construction limit, exclusion fencing will be installed to prevent turtles from entering the construction area. If a turtle is observed in the construction area during construction, it will be allowed to move out of this area on its own or, if necessary, be relocated out of this area (with authorization from the DFG), and exclusion fencing will be installed to prevent the movement of turtles back into the construction area. Additionally, the construction area will be clearly defined, using orange barrier fencing, to minimize disturbance to riparian vegetation which could be utilized by western pond turtle as upland habitat.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Swainson's Hawk)

Tree and shrub removal, other vegetation clearing, grading, and other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of Swainson's hawk.

In the study area, suitable Swainson's hawk foraging habitat occurs in grassland areas within and adjacent to the Sacramento North Levee. There are 7.79 acres of grasslands on the levee itself and 3.07 acres of grasslands proposed for project staging. It is assumed that grassland areas within the project staging area would be temporarily disturbed during construction but would be reseeded, if needed, and returned to preproject conditions following construction. Within the levee area, recreational trails proposed as part of the recreational project element would result in permanent loss of grasslands, while areas outside of recreational project components would be reseeded and returned to grassland. Although the exact loss of grassland area is not yet known, the loss is assumed to be no more than 5 acres.

A Swainson's hawk nest has been reported in a cottonwood tree on the opposite side of the Sacramento River from the study area. Pursuant to a site visit with USFWS and CDFG representatives in December 2009, the Sacramento River presents a visual barrier from this nest and project activities that occur during the nesting season (generally February 15 through August 31) are unlikely to adversely affect activities within that nest (should the nest be in use). Construction of the project would require removal of up to one acre of riparian habitat, either directly or through habitat removal. Tree and shrub removal, other vegetation clearing, grading, and other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of Swainson's hawk.

To avoid and minimize effects to Swainson's hawk, WSAFCA representatives coordinated with DFG representatives during a field visit in December 2009 and agreed to implement the following measures:

- If a nest is found to occur within or adjacent to the study area on the western side of the Sacramento River, before ground disturbance, all construction personnel will participate in a CDFG-approved worker environmental awareness program. A qualified biologist will inform all construction personnel about the life history of Swainson's hawk and the importance of nest sites and foraging habitat.
- A breeding season survey for nesting birds will be conducted for all trees and shrubs that will be removed or disturbed which are located within 500 feet (0.5 mile for Swainson's hawk) of construction activities, including grading. Swainson's hawk surveys will be completed during at least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30 with no fewer than three surveys completed in at least two survey periods, and with at least one of these surveys occurring immediately prior to project initiation (Swainson's Hawk Technical Advisory Committee 2000). Other migratory bird nest surveys can be conducted concurrent with Swainson's hawk surveys with at least one survey to be conducted no more than 48 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, can commence without any further mitigation.

- If active nests are found, WSAFCA will maintain a 0.25-mile buffer between construction activities and the active nest(s). In addition, a qualified biologist will be present on-site during construction activities to ensure the buffer distance is adequate and the birds are not showing any signs of stress. If signs of stress that may cause nest abandonment are noted, construction activities will cease until a qualified biologist determines that fledglings have left an active nest.

Swainson's hawk is a state-listed species protected under the MBTA and CFGC; therefore, these effects are considered significant. Implementation of the above-described protection measures and Mitigation Measures VEG-MM-1and WILD-MM-3would reduce this effect to less than significant.

Mitigation Measure VEG-MM-1: Compensate for the Loss of Woody Riparian Habitat

Mitigation Measure WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA

According to DFG's *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley,* loss of Swainson's hawk foraging habitat shall be mitigated for at a specified ratio that depends on the distance between the project area and the nearest active nest site (California Department of Fish and Game 1994). In accordance with these guidelines, loss of foraging habitat within a 1-mile radius is to be compensated at a ratio of 1:1, loss of habitat within 1 to 5 miles at a ratio of 0.75:1, and loss of habitat within 5 to 10 miles at a ratio of 0.5:1 (California Department of Fish and Game 1994). Loss of foraging habitat in the study area would be compensated at a ratio of 1:1. Compensation can be carried out by providing off-site habitat management lands as described in the DFG's (1994) guidelines or by purchasing credits at a local, DFG- approved mitigation bank.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Their Habitats as a Result of Construction (Other Special-Status Birds)

Several other special-status birds have potential to nest in or adjacent to the study area based on reported occurrences within a 10-mile radius. These species include white-tailed kite, northern harrier, loggerhead shrike, and purple martin.

These species are not reported to nest in the study area but are known to nest in the vicinity. Riparian forest and landscape tree areas adjacent to the construction area contain suitable nesting habitat for white-tailed kite and purple martin. Open grassland areas containing scattered shrubs and trees provide suitable nesting habitat for loggerhead shrike. Grasslands in and adjacent to the study area provide low quality nesting habitat for northern harrier.

Tree and shrub removal, other vegetation clearing, grading, or other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of special-status birds, including species of special concern (loggerhead shrike, northern harrier, and purple martin) and fully protected species (white-tailed kite), and other migratory birds protected under the MBTA and CFGC. Therefore, these effects would be considered significant. Implementation of Mitigation Measures Veg-4 and WILD-MM-4 would reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Non-Special-Status Migratory and Their Habitats as a Result of Construction (Western Burrowing Owl)

Burrowing owl is reported to nest 0.5 mile south of the study area. Burrowing owls have potential to nest in grasslands and unvegetated areas along levees throughout the study area. Construction activities, including grading and clearing activities within and adjacent to occupied lands could result in nesting failure, death of nestlings, or loss of eggs. Effects on a state species of special concern and species protected under the MBTA and CFGC are considered significant. Implementation of Mitigation Measures VEG-MM-4, WILD-MM-2, and WILD-MM-3would ensure that project activities would not result in nesting disturbance or habitat loss for this species and reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-2: Redesign the Action to Protect Special-Status Wildlife Habitat and Develop a Mitigation Monitoring Plan

In conformance with Federal and state regulations regarding the protection of raptors, a preconstruction survey for burrowing owls will be completed, in accordance with DFG guidelines described in the *Staff Report on Burrowing Owl Mitigation*, prior to the start of construction within suitable habitat and (where possible) in areas within 500 feet of the construction zone. Surveys should be conducted during the wintering (December 1 through January 31 recommended) and nesting (April 15 through July 15 recommended) seasons. Surveys should be conducted from 2 hours before sunset to 1 hour after, or from 1 hour before or 2 hours after sunrise. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if breeding or resident owls are located on or immediately adjacent to the site, the following measures will be implemented.

- No burrowing owls will be evicted from burrows during the nesting season (February 1 through August 31). Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the DFG authorizing the eviction.
- A 250-foot buffer, within which no new activity would be permissible, would be maintained between project activities and nesting burrowing owls. This protected area would remain in effect until August 31, or at the DFG's discretion and based on monitoring evidence, until the young owls are foraging independently.
- If accidental take (disturbance, injury, or death of owls) occurs, the DFG would be notified immediately.

Mitigation Measure WILD-MM-3: Coordinate with Resource Agencies and Develop Appropriate Wildlife Compensation Plans for Species Listed under ESA or CESA

If a preconstruction survey finds that burrowing owls occupy a project area, and occupied habitat will be converted to unsuitable habitat, habitat compensation on off-site mitigation lands will be implemented. Habitat management lands comprising existing burrowing owl foraging and breeding habitat will be acquired and preserved. An area of 6.5 acres (the amount of land found to be necessary to sustain a pair or an individual owl) will be secured for each pair of owls or for an individual, in the case of an odd number of birds.

Where construction would only temporarily modify occupied habitat but habitat value would return to the preproject condition, compensation would not be required.

Effect WILD-2: Disturbance or Loss of Special-Status Wildlife Species and Non-Special-Status Migratory and Their Habitats as a Result of Construction (Bats and Bat Roosts)

Pallid bat, hoary bat and western red bat have potential to roost in riparian forest habitat adjacent to the project area. Bat roosts of special-status species and non- special-status species are highly sensitive to disturbance and are considered a sensitive resource by DFG. Construction activities such as tree removal and trimming or construction noise could result in impacts on roosting bats, including the destruction of active roosts, the loss of individuals, or roost failure. In addition, nighttime construction activities could disturb bats emerging from nearby roosts resulting in the disruption of foraging activities. These effects could be considered significant if the subsequent population decline was large and affected the viability of the local populations of bats. Implementation of Mitigation Measures VEG-MM-4 and WILD-MM-5 would reduce this potential effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-5: Conduct a Preconstruction Survey for Roosting Bats and Avoid or Mitigate Potential Effects

Prior to any tree trimming and removal or other construction activities, a qualified biologist should conduct a preconstruction survey to determine whether bats are present. The survey should consist of a nighttime emergence survey of suitable trees for evidence (presence of guano or urine stains) of use by bats, and it should be conducted no more than 14 days prior to construction activities. If the biologist determines that the area surveyed does not contain any active roosts, activities may commence without any further mitigation. If active roosts are found, roosting structures should be retained, and the need for a construction buffer should be determined through consultation with DFG. If avoidance is not possible, DFG may require that bats be excluded from the habitat prior to start of the breeding and/or hibernation season. Compensatory mitigation for the loss of roosting habitat also should be determined through consultation with DFG but may include the construction and installation of suitable replacement habitat on site.

Effect WILD-3: Disturbance or Loss of Common Wildlife Species as a Result of Construction (Migratory Birds)

Numerous non-special-status migratory bird species also have potential to nest in and adjacent to the construction area. Examples of these include red-tailed hawk, red-shouldered hawk, great horned owl, and American kestrel.

Tree and shrub removal, other vegetation clearing, grading, or other construction activities conducted during the nesting season (generally February 15 through August 31) could remove or cause abandonment of active nests of migratory birds protected under the MBTA and CFGC. Therefore, these effects would be significant. Implementation of Mitigation Measures VEG-MM-4 and WILD-MM-4 would reduce this effect to less than significant.

Mitigation Measure VEG--MM-4: Conduct Mandatory Contractor/Worker Awareness Training for Construction Personnel

Mitigation Measure WILD-MM-4: Avoid or Minimize Construction-Related Effects on Nesting Birds

Effect WILD-3: Disturbance to or Loss of Common Wildlife Species as a Result of Construction (Other Common Species)

The study area contains both natural and constructed habitats that support numerous common species. These species include a wide variety of terrestrial invertebrates, birds and raptors, amphibians, reptiles, and mammals. Although nesting migratory birds and bats would be protected from nesting disturbance through implementation of Mitigation Measure WILD-MM-1, WILD-MM-2, and WILD-MM-5, other species may be harmed or killed during construction. Other than nesting migratory birds and bats, other common wildlife species are not afforded protection under CEQA or NEPA because they are considered to be widespread and abundant. Effects on these species are therefore considered to be less than significant. No mitigation is required.

Effect WILD-4: Disruption of Wildlife Movement Corridors as a Result of Construction

In the study area, the riparian forest adjacent to the Sacramento River is considered to be a major movement corridor. Although construction has been designed to avoid impacts to this corridor, the construction site, particularly the Sacramento North Levee, may also be used as a movement corridor for wildlife due to its proximity to the Sacramento River. During construction of levee improvements, movement through the project area would be temporarily impeded by the placement of physical barriers (fencing) used to protect resources outside of the construction footprint but movement would be restored to the pre-project condition following construction. Therefore, disruption of movement through the project area is less than significant. No mitigation is required.

5.12.3.3 The Rivers Alternative B

With respect to wildlife resources, the construction corridor and construction-related effects associated with The Rivers Alternative B are the same as those described above for The Rivers APA. In the interest of brevity, effects discussions and mitigation measures are not repeated here.

Section 5.13
Land Use and Agriculture—The Rivers Early Implementation Project

5.13.1 Affected Environment

This section describes the affected environment for land use and agriculture in The Rivers EIP project area, including the regulatory and environmental setting.

5.13.1.1 Regulatory Setting

5.13.1.1.1 Federal

The following Federal policies related to land use and agriculture may apply to implementation of The Rivers EIP. Please see Section 3.11.2.1, Regulatory Setting, for a more complete description of each policy.

- Farmland Protection Policy Act
- Federal Farmland Designations

5.13.1.1.2 State

The following state policies related to land use and agriculture may apply to implementation of The Rivers EIP. Please see Section 3.1.2.1, Regulatory Setting, for a more complete description of each policy.

- Williamson Act

5.13.1.1.3 Local

The following local policies related to land use and agriculture may apply to implementation of The Rivers EIP. Please see Section 3.11.2.1, Regulatory Setting, for a more complete description of each policy.

- Delta Protection Commission
- *Yolo County General Plan*
- *City of West Sacramento General Plan*

5.13.1.2 Environmental Setting

This section discusses the environmental setting related to land use and agriculture in The Rivers EIP project area.

The proposed levee improvement would take place entirely within Yolo County and the City of West Sacramento, along the Sacramento River North Levee. The land in and adjacent to the project area

has been designated by the City of West Sacramento as public/quasi public, single-family residential, waterfront, recreation-parks, and public open space (City of West Sacramento 2009).

Residential areas are at the southwest and southeast corners of the project area. The residential area to the southwest is comprised of single-family homes. The residential area to the southeast is The Rivers gated community, also comprised of single family homes. The area that lies south of the 70+00 to 82+50 section of the project area is comprised of Bryte Park, which is designated as recreation-parks by the City of West Sacramento. The portion of the city that lies directly south of the 82+50 to 92+50 section of the project area is comprised of Riverbank Elementary School, which is designated as public-quasi public areas. Inside The Rivers gated community at the southeast corner of the project area, the land has been designated as waterfront. The area of the levee is designated as public open space (City of West Sacramento 2009).

No land in the project area has been designated as agricultural, nor is any land part of a Williamson Act contract.

5.13.2 Environmental Consequences

This section describes the environmental consequences relating to land use and agriculture for the proposed Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.11.3.3, Effects and Mitigation Measures.

5.13.2.1 Assessment Methods

This evaluation of land use and agriculture is based on a review of the regulatory setting above, review of the project in regard to compliance with Federal, state and local land use plans and regulations, and field observations. Key effects were identified and evaluated based on the environmental characteristics of The Rivers EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

5.13.2.2 Determination of Effects

For this analysis, an effect pertaining to land use and agriculture was analyzed under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.*), and standards of professional practice.

For land use, an effect would:

- physically divide an established community;
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect; or
- conflict with any applicable habitat conservation plan or natural community conservation plan.

For agriculture, an effect would:

- convert prime farmland, unique farmland, or farmland of statewide importance;
- conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- involve other changes in the existing environment, which because of their location or nature, could result in conversion of farmland to non-agricultural use.

5.13.3 Effects and Mitigation Measures

5.13.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to land use and agriculture such as conversion of farmland or changes in land zoning would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage, slope stability or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Land Use program analysis (Section 3.11.3.3.1). In summary, these effects could include temporary and permanent reduction in agricultural productivity, conversion of land from its designated use, and physical division of established communities. In addition, if the Sacramento River North Levee were to fail, the Bryte and Rivers residential neighborhood, Bryte Park, and Riverbank Elementary School would be in the direct line of floodwaters.

5.13.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on land use and agriculture. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than significant	N/A	N/A
Effect LU-2: Change in Land Use Designations or Potential to Conflict with Local Land Use Designations as a Result of Construction	Less than significant	N/A	N/A

Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction

During construction of The Rivers APA, a staging area to house construction equipment and materials would be necessary (see Figure 5-1 for the location of the staging area). The staging and construction areas are zoned as Waterfront and Public Open Space by the City of West Sacramento (see Figure 3.11-1). These will be returned to their original uses following the completion of construction. Thus, The Rivers APA would not result in significant effects on land use as a result of temporary land use changes. This effect is considered less than significant. No mitigation is required.

A portion of the construction area encompasses 15 residences from which the residents will be temporarily relocated during construction. The effects associated with relocating these residents are discussed in Section 5.14, "Socioeconomic and Community Effects."

Effect LU-2: Change in land use Designations or Potential to Conflict with Local Land Use Designations as a Result of Construction

Implementation of The Rivers APA may require WSAFCA to acquire a permanent right-of-way in areas adjacent to the levee through fee title or easement interest within the footprint of the project improvements to prevent residential or utility encroachments into the flood control system. At the western end of the project area, the land is zoned as public/quasi-public, a zone that provides for government-owned facilities, public and private schools, and quasi-public uses such as hospitals and churches. The purpose of this zone is to provide for a broad range of public, quasi-public, and non-profit institutional uses. The proposed use in WSAFCA's acquired permanent right-of-way, flood infrastructure maintenance, would not conflict with current zoning and land use as the current use is recreation-park land. Additionally, 23 acres of land located on top of the levee (currently designated public open space) would be added to Bryte Park, resulting in a net gain in recreation-park land.

At the eastern end of the project area in The Rivers gated community, there are 11 residences located on top of the levee and four residences adjacent to the landside toe of the levee that encroach into the levee operation and maintenance area. The Rivers gated community is zoned as waterfront, a zone that provides for marinas, restaurants, retail, amusement, hotel, and motel uses, mid-rise and high-rise offices, multi-family residential units (which are oriented principally to the river), public and quasi/public uses, and similar and compatible uses. WSAFCA's acquisition of a permanent right of way within The Rivers gated community, would not conflict with current zoning, however, it may conflict with the current residential use. However, flood infrastructure maintenance could be considered a compatible use within the Waterfront zone. If property were to be acquired as a permanent right of way, the amount of land would affect a small percentage of the housing and residential use within The Rivers gated community and would not result in a loss substantial enough to divide the community.

In summary, the implementation of The Rivers APA would still be compatible with local land use designations because the public open space, public/quasi-public, and waterfront designations allow flood infrastructure maintenance uses. This effect would be less than significant. No mitigation is required.

5.13.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on land use and agriculture. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
LU-1: Temporary Changes in Land Uses to Accommodate Construction	Less than significant	N/A	N/A
Effect LU-2: Change in Land Use Designations or Potential to Conflict with Local Land Use Designations as a Result of Construction	Less than significant	N/A	N/A

Effect LU-1: Temporary Changes in Land Uses to Accommodate Construction

This effect is the same as described above under The Rivers APA. This effect is considered less than significant. No mitigation is required.

Effect LU-2: Change in land use Designations or Potential to Conflict with Local Land Use Designations as a Result of Construction

Implementation of The Rivers Alternative B may require WSAFCA to acquire a permanent right- of-way in areas adjacent to the levee through fee title or easement interest within the footprint of the project improvements to prevent residential or utility encroachments into the flood control system. At the western end of the project area, the land is zoned as public/quasi-public, a zone that provides for government-owned facilities, public and private schools, and quasi-public uses such as hospitals and churches. The purpose of this zone is to provide for a broad range of public, quasi-public, and non-profit institutional uses. The proposed use within WSAFCA's acquired permanent right of way, flood infrastructure maintenance, would not conflict with current zoning and land use as the current use is recreation-park land. Additionally, 23 acres of land located on top of the levee (currently designated public open space) would be added to Bryte Park, which would create a net gain in recreation-park land.

At the eastern end of the project area in The Rivers gated community, there are 11 residences located on top of the levee and four residences adjacent to the landside toe of the levee that encroach into the levee operation and maintenance area. The Rivers gated community is zoned as waterfront, a zone that provides for marinas, restaurants, retail, amusement, hotel, and motel uses, mid-rise and high-rise offices, multi-family residential units (which are oriented principally to the river), public and quasi/public uses, and similar and compatible uses. WSAFCA's acquisition of a permanent right-of-way in The Rivers gated community would not conflict with current zoning, but it may conflict with the current residential use. However, flood infrastructure maintenance could be considered a compatible use in the Waterfront zone. If property were to be acquired as a permanent right of way, the amount of land would affect a small percentage of the housing and residential use within The Rivers gated community and would not result in a loss substantial enough to divide the community.

In summary, the implementation of The Rivers Alternative B would still be compatible with local land use designations because the public open space, public/quasi-public, and waterfront designations allow flood infrastructure maintenance uses. This effect would be less than significant. No mitigation is required.

Section 5.14
Socioeconomic and Community Effects—The Rivers Early Implementation Project

5.14.1 Affected Environment

This section describes the affected environment for socioeconomics and the community in The Rivers EIP project area, including regulatory and environmental setting.

5.14.1.1 Regulatory Setting

The following policies related to socioeconomics and the community may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.12.2.1, Regulatory Setting, for a more complete description of the policy.

5.14.1.1.1 Federal

- Uniform Relocation Assistance and Real Property Acquisition Policies Act

5.14.1.1.2 State

- Relocation Assistance and Property Acquisition

5.14.1.1.3 Local

- *City of West Sacramento General Plan*

5.14.1.2 Environmental Setting

This section discusses the environmental setting related to socioeconomics and the community in The Rivers EIP study area. A regional socioeconomic and community setting for The Rivers EIP project area is described in the Program Area Affected Environment (Section 3.12.2.2). Additional details relevant to the analysis of socioeconomic and community effects at The Rivers EIP project area are described below.

5.14.1.2.1 Housing and Property

- There are 15 residences in the immediate vicinity of proposed construction activities under either of The Rivers EIP alternatives. During some periods of time, construction activities would be directly adjacent to these homes. In addition, the proposed utility modifications would result in the temporary disruption of service (water, telephone, electricity, gas and sanitary sewer) during construction.
- There are 11 residences located on top of the levee and four residences adjacent to the landside toe of the levee that encroach into the levee operation and maintenance area. Before construction, WSAFCA may acquire temporary or permanent right-of-way through fee title or

easement interest within the footprint of the project improvements to prevent residential or utility encroachments into the flood control system.

5.14.1.2.2 Employment

No land in agricultural production is located within or adjacent to The Rivers EIP project area that could be affected by implementation of either alternative.

As described in the setting section of Section 3.15, Recreation, some unofficial recreational activities, such as fishing, that may provide commerce for local recreation-related businesses (e.g., bait shops) occur on the vegetated waterside berm located adjacent to the levee at The Rivers EIP project area.

5.14.2 Environmental Consequences

This section describes the analysis of effects relating to socioeconomic and community conditions for The Rivers EIP. It describes the methods used to determine the effects of the proposed project and identifies the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.12.3.3, Effects and Mitigation Measures.

5.14.2.1 Assessment Methods

Effects on socioeconomics and the community were evaluated qualitatively based on the criteria listed below in Determination of Effects. Additionally, The Rivers EIP was evaluated for consistency with relevant local plans and policies at the Federal, state and local level.

5.14.2.2 Determination of Effects

For this analysis, an effect pertaining to socioeconomics and the community was analyzed under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 et seq.), and standards of professional practice:

- a substantial change in employment;
- inducement of substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure); or
- displacement of substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

5.14.2.2.1 Effect Assumptions

Although some unofficial recreational activities that may provide commerce for local recreation-related businesses occur on the vegetated waterside berm located adjacent to the levee at The Rivers EIP project area, there are abundant close-by alternate locations for the types of activities that may be potentially affected by project construction. The project-level recreation analysis found project-related effects on recreation to be less than significant. Employment at recreation-related

businesses is therefore not anticipated to be affected by project implementation, and is therefore not discussed further in this section.

5.14.3 Effects and Mitigation Measures

5.14.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to socioeconomics or the community would occur and there would be no changes in existing population or employment, except for the changes currently planned for in the appropriate local and state planning documents. No displacement of existing residences to accommodate an expanded levee footprint for certain levee alternatives would occur. Therefore, there would be no effect on this resource under the No Action Alternative.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to under-seepage, slope stability, or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Socioeconomic and Community Effects program analysis (Section 3.12.4.1). To summarize the program analysis, should a levee failure and associated flooding occur at this site, there could be widespread temporary or permanent displacement of residents. Damages suffered from flooding could lead to the long-term disruption of industrial, agricultural and retail economic activities within the city of West Sacramento and within the greater Sacramento region. Dependent on the degree of damage caused, disruption of activities could lead to a reduction in employment and short- to long-term depressed economic conditions citywide resulting from damage to industrial, retail and agricultural facilities and major transportation facilities that support their activities. These effects on socioeconomic conditions would be significant. Post-flooding conditions could result in short-term increases in employment for post-flooding cleanup and restoration activities, but these increases would not likely offset the potential losses.

5.14.3.2 The Rivers Applicant Preferred Alternative—Slurry Wall and Landside Slope Flattening

Implementation of The Rivers APA would result in the following effects on socioeconomics and the community. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect SOC-1: Effects on Residents	Significant and unavoidable	N/A	N/A
Effect SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A

Effect SOC-1: Effects on Residents

Construction of The Rivers APA would be adjacent to 30 to 40 residences, would require temporary displacement of the occupants of approximately 15 residences, and may require easement or right-of-way acquisition. WSAFCA has committed to providing relocation services and compensation to the affected residents at The Rivers APA project area. WSAFCA would develop a Temporary Resident Relocation Plan, as described in Section 2.9 of Chapter 2, which would outline the process for providing notice for relocation, coordinating relocating activities, and providing security for homes that are vacated, among other issues related to temporary relocation. All acquisition and relocation services, as well as compensation for living expenses for temporarily relocated residents, would be provided in compliance with Federal and state relocation laws. No residents would be permanently displaced and no new construction would be necessary. However, because of the inconvenience to displaced residents, this effect is considered significant and unavoidable.

Effect SOC-4: Temporary Increase in Employment in the Region during Construction

As described in the Program Environmental Consequences, construction activities associated with implementation of The Rivers EIP would temporarily increase employment and personal income in the local area. Preliminary cost estimates anticipate that total construction-related expenditures associated with The Rivers APA would be approximately $15,000,000 to $25,000,000 (Vecchio pers. comm. 2009) in 2011. This is an estimate of direct costs only, and does not include indirect/induced changes in employment and personal income resulting from project construction. Project construction would benefit the local economy by temporarily increasing employment and personal income. Although the increase in employment is not considered substantial when compared to total employment in the region, this effect on employment would be beneficial.

5.14.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on socioeconomics and the community. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect SOC-1: Effects on Residents	Significant and unavoidable	N/A	N/A
Effect SOC-4: Temporary Increase in Employment in the Region during Construction	Beneficial	N/A	N/A

Effect SOC-1: Effects on Residents

Construction of The Rivers Alternative B would require temporary displacement of the occupants of 15 residences, and may require easement or right-of-way acquisition. WSAFCA has committed to providing relocation services and compensation to the affected residents at The Rivers APA project area. WSAFCA would develop a Temporary Resident Relocation Plan, as described in Section 2.9 of Chapter 2, which would outline the process for providing notice for relocation, coordinating relocating activities, and providing security for homes that are vacated, among other issues related to temporary relocation. All acquisition and relocation services, as well as compensation for living expenses for temporarily relocated residents, would be provided in compliance with Federal and

state relocation laws. No residents would be permanently displaced and no new construction would be necessary. However, because of the inconvenience to displaced residents, this effect is considered significant and unavoidable.

Effect SOC-4: Temporary Increase in Employment in the Region during Construction

Construction-related expenditures associated with The Rivers Alternative B have not been calculated, but are anticipated to be similar to the numbers presented for The Rivers APA, although construction would take place over 2 years instead of 1. Project construction would benefit the local economy by temporarily increasing employment and personal income. Although the increase in employment is not considered substantial when compared to total employment within the region, this effect on employment would be beneficial.

Section 5.15
Environmental Justice—The Rivers Early Implementation Project

5.15.1 Affected Environment

This section describes the affected environment for environmental justice in The Rivers EIP project area, including regulatory and environmental setting.

5.15.1.1 Regulatory Setting

5.15.1.1.1 Federal

The following Federal policy related to environmental justice may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.13.2.1, Regulatory Setting, for a more complete description of each policy.

- Federal Executive Order 12898, Environmental Justice

5.15.1.1.2 State

The following state policies related to environmental justice may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.13.2.1, Regulatory Setting, for a more complete description of each policy.

- State of California environmental justice regulations passed in 2001. These laws define environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

5.15.1.2 Environmental Setting

This section discusses the environmental setting related to environmental justice in The Rivers EIP project area.

5.15.1.2.1 Study Area Demographics

The study area is in the city of West Sacramento, in Yolo County. For comparison, the same demographic information presented for West Sacramento is also presented for Yolo County and the State of California.

5.15.1.2.2 Local Setting

In 2000, Caucasians and Asians made up the largest two populations in the state, accounting for 59.5% and 10.9% of the population, respectively, while 16.8% of respondents claimed "other race." Those of Hispanic origin made up 32.4%, almost one-third of the State's population (U.S. Census 2008).

In 2000, Caucasians and Asians made up the largest two populations in Yolo County, accounting for 67.7and 9.9% respectively, while 13.8% of respondents claimed "other race." Those of Hispanic origin made up 25.9% of Yolo County (U.S. Census 2008).

In 2000, Caucasians and Asians made up the largest two populations in the city of West Sacramento accounting for 65% and 7.2% of the population respectively, while 16% claimed "other race." Those of Hispanic origin made up 30% of the city (U.S. Census 2008). Table 5.15-1 compares data regarding race in the study area in 2000 and 2005. Table 5.15-2 compares the household poverty status by city, county, and state.

Table 5.15-1. Race/Origin Characteristics by City/County/State, 2000 and 2005

	2000			2005		
	City of West Sacramento (percentage)	Yolo County (percentage)	State of California (percentage)	City of West Sacramento (percentage)	Yolo County (percentage)	State of California (percentage)
Race						
White	65.0	67.7	59.5	65.0	67	59.5
Black or African American	2.6	2	6.7	2.6	2	6.7
American Indian and Alaska Native	1.8	1.2	1.0	1.8	1	1.0
Asian	7.2	9.9	10.9	7.2	11	10.9
Native Hawaiian, other Pacific Islander	0.6	0.3	0.3	0.6	0.08	0.3
Some Other Race	16.0	13.8	16.8	16.0	12	16.8
Two or more races	6.9	5.2	4.7	6.9	5	4.7
Origin						
Hispanic	30.0	25.9	32.4	30.0	27.8	32.4

Source: U.S. Census Bureau 2000 and 2005 American Community Survey.

Table 5.15-2. Household Poverty Status by City/County/State, 2000

City	City of West Sacramento	Yolo County	State of California
Percent below poverty level	22.3	18.4	14.2

Source: U.S. Census Bureau 2000; California Employment Development Department 2000.

5.15.2 Environmental Consequences

This section describes the environmental consequences relating to environmental justice for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.13.3.3, Effects and Mitigation Measures.

5.15.2.1 Assessment Methods

The population data that are pertinent to the analysis of environmental justice include race, income, and age characteristics such as:

- the percent of minority population (Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, some other race, and two or more races);
- the percent of persons of Hispanic origin;
- the percent of population below the poverty level; and
- the percent of population residing below the U.S. Census Bureau poverty threshold, defined as a single person with an income below $8,840, or a family of four with an income below $16,588.

Proposed project environmental justice effects were analyzed by comparing census data from the local setting and regional setting with data for the State of California.

5.15.2.2 Determination of Effects

Effects pertaining to environmental justice were considered significant if the project would result in a disproportionate effect on minority or low-income communities.

5.15.3 Effects and Mitigation Measures

5.15.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Environmental Justice program analysis (Section 3.13.3.3.1). In summary, a catastrophic flood event would likely affect populations of all income and ethnic classifications and would not result in a disproportionately high or significant effect on minority or low-income populations.

5.15.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effect on environmental justice. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	

Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations

The Rivers APA would reduce the risk of flooding to existing residential, commercial, and industrial development in the WSAFCA service area. While there are low-income and minority populations present throughout the study area, the flood protection benefits of the project would reach all segments of the population in the city of West Sacramento.

Construction-related environmental effects (e.g. exposure to noise, dust, and traffic) may occur in and around the project site, but the effects would be temporary and the neighborhood near The Rivers APA is largely affluent. There would be no disproportionate effects to low-income or minority populations. Some residents would be temporarily displaced during construction (this effect is discussed in Section 5.14, "Socioeconomic and Community Effects"); however, the residents who would be displaced are not disproportionately low-income or minority.

There is a known vagrant population that camps along the Sacramento River near The Rivers APA. The project could displace this population during construction activities. Increased recreational use of these areas as a result of the APA's recreation improvements may deter camping activity. However, there is not enough data about this population to make conclusions about the amount of people displaced. In addition, any loitering or camping along the river corridor is unlawful.

The Rivers APA would not result in a significant disproportionate effect on minority or low-income populations.

5.15.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effect on environmental justice. A description of this effect is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations	No effect	N/A	

Effect EJ-1: Disproportionate Effect on Minority or Low-Income Populations

This effect is the same as described above under The Rivers APA. The Rivers Alternative B would not result in a significant disproportionate effect on minority or low-income populations.

Section 5.16
Visual Resources—
The Rivers Early Implementation Project

5.16.1 Affected Environment

This section describes the affected environment for visual resources in The Rivers EIP project area, including regulatory and environmental setting.

5.16.1.1 Regulatory Setting

5.16.1.1.1 Local

The following local policies related to visual resources may apply to implementation of The Rivers EIP. Please see Section 3.14.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*
- *Yolo County General Plan*

5.16.1.2 Environmental Setting

This section discusses the environmental setting related to visual resources in The Rivers EIP project area. Definitions of concepts and terminology related to visual resources, such as visual quality, viewer exposure and sensitivity, and visual character that pertain to this study area are outlined in the Program Area Affected Environment.

5.16.1.2.1 Study Area

The study area for The Rivers EIP is the northern-most point of the Sacramento River North Levee. The study area is described in detail in the Program Affected Environment, Sacramento River North Levee section. Details pertinent to The Rivers EIP project area are provided below.

The Rivers EIP study area is at the northern tip of the City of West Sacramento boundary, directly west of the Sacramento River's confluence with the American River and east of the Sacramento Bypass Levee. The area is urbanized and has commercial and industrial developments, residential communities, educational facilities, open space, and riparian corridors.

The eastern most portion of The Rivers EIP project area is inside a newer gated development built in the last decade called The Rivers Community. Homes in this community are large two-story structures with small lots and have not been designed to meld with the older communities of Bryte and Broderick to the south, with respect to layout, architectural style, and streetscaping, yet it is speckled with mature oaks and other trees that were left to remain growing on certain properties. Some of the homes were constructed on the crown of the levee, while others are only separated by the project area by a small thoroughfare. Homes built atop the levee are adjacent to mature vegetation that lines the Sacramento River throughout the project area (Figure 5.16-1, Photo 1).

The southern border of the project area is bounded by the older residential homes comprising the Bryte and Broderick areas, west of The Rivers Community. The western-most end of the project area is bounded by Riverbank Elementary School, Bryte Park, and Alice Norman Playfields that are adjacent to the levee. In addition, the Lighthouse Golf Course is located adjacent to the levee, between the middle school and The Rivers Community.

The Sacramento River corridor creates a noticeable contrast to the surrounding, predominantly suburban area. Most views from the project area are limited to the foreground by bends in the river, vegetation, and development. The visual quality of the area is moderately unified because the landscape is fairly congruent and harmonious in terms of scale, color, and form. The inherent scenic qualities presented by a naturalized, accessible river corridor in a highly developed area result in a vividness that is moderately high. The presence of development and infrastructure surrounding this corridor results in a study area that is moderate in intactness and unity.

At the street level, viewers have foreground views of the levee and mature riparian trees, with little to no middleground and background views (Figure 3.14-2a, Photo 4). While atop the levee, foreground views to the southeast extend over open space playing fields toward background views of the downtown Sacramento skyline (Figure 5.16-1, Photo 2). While atop the levee looking due east and west, viewers have foreground views of only the levee crown with riparian vegetation to the north lining the levee (Figure 5.16-1, Photo 3).

5.16.1.2.2 Viewer Groups

The primary viewer groups in The Rivers study area are persons living or conducting business near this area, such as those living in The Rivers Community; travelers using local roads (including those on levee crowns); and recreationists (boaters, and fishermen on the Sacramento River; bicyclists; joggers). Primary viewer groups also include educators, students, and parents associated with Riverbank Elementary School. These groups have direct views of the project area described above.

Residents

Suburban residents are located directly adjacent to The Rivers EIP study area, or are separated from the project area by local streets. Some homes located on Rivercrest Drive are atop the levee crown. Suburban residences mostly are oriented inward toward the developments, and only residences on the outer edge of the developments have middleground and background views of levees. The residents in the project vicinity are likely to have a high sense of ownership over their adjacent waterways, the open space that surrounds them and their inherent scenic quality. Because of their potential exposure to such views, short distance from the study areas, and sense of ownership, these residents are considered to have high sensitivity to changes in the project area viewshed.

Businesses

Within the vicinity of The Rivers EIP project area there are residential and educational facilities which people frequent daily. Most persons within these facilities have semipermanent views from their respective facilities of the project area; however, some, such as those who work from their home located in the project area, have permanent views of the area. Situated in different locations throughout the study areas, these facilities' views range from views limited by the levees to sweeping views that extend out to the background. Users of these facilities are likely to be occupied with their work activities and tasks at hand.



Photo 1: Looking northeast atop the levee crown. Note the fence delineating the property line of a home located on the levee crown to the right of the photo and the riparian vegetation lining the levee in the foreground.

Graphics/Projects/00875.07/ WSac Program EIR/EIS-EIR/Visual (08-09) SS

Figure 5.16-1
The Rivers–Photo 1



Photo 2: Looking southwest from atop the levee, across the Bryte Park playing fields and the Bryte and Broderick neighborhoods, toward the downtown Sacramento skyline in the background.

Graphics/Projects/00875.07/ WSac Program EIR/EIS-EIR (08-09) SS

Figure 5.16-1
The Rivers–Photo 2



Photo 3: Looking due east from atop the levee crown, west of The Rivers community. Note the very wide levee crown, and the row of riparian vegetation in the middleground to the north.

Graphics/Projects/00875.07/ WSac Program EIR/EIS-EIR/Visual (08-09) SS

Figure 5.16-1
The Rivers–Photo 3

Because of their limited viewing times traveling to and from work and their focus on tasks at hand, this viewer group is considered to have moderate sensitivity to changes in views.

Roadway Users

Roadway users' vantages differ based on the roadway they are traveling and elevation of that roadway. The majority of views at the project area are mostly limited to the foreground by suburban, commercial, and industrial development; vegetation; and the levees themselves. Views to the middleground and background, including of the Sacramento River, are present but are limited to areas where structures that would otherwise conceal background views from the roadway, such as homes, are set back and where there is limited vegetation along the river corridor.

Travelers use roadways in the project area at varying speeds based on the traveler's familiarity with the route and roadway conditions (i.e., presence or absence of rain). Speed can be expected to be minimal near the project area as most of the roadways are in residential areas and/or near Riverbank Elementary School, extending the duration of travelers' views. Viewers who frequently travel these routes generally possess moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with a high regard and as a holistic visual experience. Viewer sensitivity is high among most roadway travelers in this project area because it is within their neighborhood and community for which many viewers feel a strong ownership of.

Recreationists

Recreational users view the project area from parks, waterways, roadways, and from the levees themselves. Recreational uses consist of boating and fishing, nature watching, walking, running, jogging, and bicycling along levee crowns and local roads. Waterway users have differing views, based on their location in the landscape and are accustomed to variations in the level of industrial, commercial, suburban, and recreational activities occurring within the project area. The amount of vegetation present along the levees creates a softened, natural edge that is enjoyed by all recreationists. Local recreationists also have a high sense of ownership over the waterways, corridors, and levees they use for recreation, being that these areas are highly valued throughout the greater Sacramento area.

Viewer sensitivity is high among recreationists in the project area because they are more likely to value the natural environment highly, appreciate the visual experience, have a high sense of ownership, and be more sensitive to changes in views.

5.16.2 Environmental Consequences

This section describes the environmental consequences relating to visual effects for the proposed Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable

mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.14.3.3, Effects and Mitigation Measures.

5.16.2.1 Assessment Methods

The key effects were identified and evaluated based on the environmental characteristics of The Rivers EIP project area and the magnitude, intensity, and duration of activities related to the construction and operation of this project.

This evaluation of visual effects is based on:

- direct field observation from vantage points, including neighboring buildings, property, and roadways (conducted November 28, 2007, February 5, 2009, and Sept. 2009);
- photographic documentation of key views;
- professional standards (for discussion on these standards see Section 3.14.3.2.1);
- review of project construction drawings; and
- review of the project with regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.

5.16.2.2 Determination of Effects

For this analysis, an effect pertaining to visual resources was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.):

- cause a substantial, demonstrable negative aesthetic effect on a scenic vista or view open to the public;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime public views.

5.16.3 Effects and Mitigation Measures

5.16.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to visual resources would occur. Therefore there would be no effect on this resource attributable to implementation of the No Action Alternative.

However, without levee improvements there is the continued risk of levee failure and levee deterioration would continue to occur, and the risk that the Sacramento River North Levee could fail

due to seepage or slope stability or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Visual Resources program analysis (Section 3.14.3.3.1). A catastrophic levee failure would result in flooding and inundation that could significantly damage existing visual resources. Flood-fight or cleanup activities could introduce new visual elements into the project area. In addition, the levee itself would be damaged irreparably or for an extended period of time which would remove a scenic vista the enjoyment derived by recreationists when viewing nature and wildlife scenery. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on visual resources cannot be quantified based on available information.

It is assumed that under the No Action Alternative, compliance with USACE's guidance regarding vegetation on levees would occur. This could result in the removal of a substantial amount of vegetation at The Rivers EIP project area, causing a significant effect on visual resources similar to program Effect VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance

5.16.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on visual resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VIS-2: Create a New Source of Light or Glare	Significant	Significant and unavoidable	No feasible mitigation
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance	Significant	Significant and unavoidable	No feasible mitigation
VIS-6: Conflict with Local Visual Resource Policies	Significant	Significant and unavoidable	No feasible mitigation

Effect VIS-2: Create a New Source of Light or Glare

The program would not add any new permanent source of light or glare. During The Rivers APA construction, it is expected that construction would occur at night, requiring temporary nighttime lighting. The staging area would also be lit at night for security reasons. Such nighttime lighting would be temporary through the duration of construction. There are many residences on the landside of the levee, within close proximity to The Rivers APA area, and there are 15 residences on top of the levee that may be directly within the construction zone. This effect would be significant because some residents would have direct views of the construction adjacent to their homes and to the nighttime lighting associated with the levee alternatives. This would significantly affect their viewshed as these residences are not accustomed to nighttime glare of this degree. This effect would be significant and unavoidable.

Because this effect is significant and unavoidable, those directly affected by this effect would be relocated. This effect is discussed in Section 5.14, "Socioeconomic and Community Effects". As part of the environmental commitment described in Section 2.9, Chapter 2, Alternatives, WSAFCA would

provide assistance for residents who are required to relocate during the construction period. WSAFCA would compensate residents for reasonable rent and living expenses incurred due to relocation. Residents would have the right to decent, safe and sanitary housing in accordance with the Uniform Act.

Effect VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities

Construction activities associated with The Rivers APA would introduce considerable heavy equipment and associated vehicles into the views of adjacent residents, recreationists, motorists, and businesses. The equipment would be visible throughout the construction season. Presence of the equipment would temporarily degrade the visual quality of the project area to low vividness, intactness, and unity.

Residential viewer groups in the study area and vicinity are not accustomed to seeing construction activities and equipment, and sensitivity to such effects would be high. Other viewer groups are more accustomed to seeing construction activities and equipment from construction that has occurred in the business parks near the I Street Bridge, daily activities in the industrial areas, and local roadway construction projects and would have low sensitivity to construction effects.

However, because this effect is temporary, would last no longer than the construction duration, and is limited to the relatively small project area, it would not substantially degrade the visual quality of the study area. In addition, the implementation of an environmental commitment to provide temporary construction barriers, as needed, between construction zones and residences, as described in Section 2.9 of Chapter 2, Alternatives, would make this effect less than significant.

In addition, effects on roadway users would be less than significant because of the short intervals of time that they are in visual contact with the program reaches and familiarity with construction along other roadways in the vicinity.

Effect VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance

Construction of The Rivers APA has the potential to substantially degrade the existing visual character or quality of the project site and surroundings for viewer groups because construction would require the removal of all vegetation within the construction footprint and within established operations and maintenance vegetation-free zones according to USACE policies. This would mainly affect the levee crown, the landside and waterside levee slopes, and 15 feet from the toe on both sides.

Construction of The Rivers APA would require compliance with recent USACE policies regarding woody vegetation on levees. This policy requires that all woody vegetation within the levee prism must be removed and the levee slope maintained free of woody vegetation. The levee slopes and adjacent land for 15 feet on either side of the levee would be required to be maintained free of woody vegetation in perpetuity, resulting in the loss of a highly valued, regional aesthetic landscape component. Trees and vegetation located outside of the levee prism, construction footprint, and maintenance zone would remain to the extent possible and retain high visual quality (i.e. on the waterside berm between the levee maintenance zone and the Sacramento River where the mature oak forest and riparian forest would be allowed to remain. The mature vegetation along the berm on the waterside of the levee is characteristic of the region and is a striking, distinctive element in the

landscape. The existing vegetation that is removed will be replaced with herbaceous vegetation. An environmental commitment has been made by WSAFCA to minimize vegetation removal to the extent possible (Section 2.9, Chapter 2, Alternatives); however, maintaining the levee and levee maintenance zone void of the characteristic riparian vegetation and mature landscaping would highly degrade the visual character and quality of the area for all viewer groups. No feasible mitigation is available to reduce the effect. This effect would be significant and unavoidable.

Effect VIS-6: Conflict with Local Visual Resource Policies

As mentioned above under the local regulatory policies, the majority of the local jurisdictions have tree preservation ordinances and riverfront master plans where riparian vegetation and mature landscaping are highly desirable components that are greatly valued for the aesthetic qualities they provide. Construction of The Rivers APA would require the removal of all vegetation within the construction footprint and all woody vegetation within the levee prism, as well as within 15 feet from the levee toe on both sides. This removal of vegetation would conflict with local visual policies. Because vegetation in many areas would not be allowed to be replanted, as discussed in Effect VIS-5, no feasible mitigation is available to reduce the effect. This effect would be significant and unavoidable.

5.16.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on visual resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
VIS-2: Create a New Source of Light or Glare	Significant	Significant and unavoidable	No feasible mitigation
VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities	Less than significant	N/A	N/A
VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance	Significant	Significant and unavoidable	No feasible mitigation
VIS-6: Conflict with Local Visual Resource Policies	Significant	Significant and unavoidable	No feasible mitigation

Effect VIS-2: Create a New Source of Light or Glare

This effect is the same as described above under The Rivers APA. The Rivers Alternative B would create a new source of light and glare that would result in a significant and unavoidable effect on local residents. Because this effect is significant and unavoidable, those directly affected by this effect would be relocated. This effect is discussed in Section 5.14, “Socioeconomic and Community Effects”. As part of the environmental commitment described in Section 2.9, Chapter 2, Alternatives, WSAFCA would provide assistance for residents who are required to relocate during the construction period.

Effect VIS-4: Cause Temporary Visual Effects as a Result of Construction Activities

This effect is the same as described above under The Rivers APA. The Rivers Alternative B would temporarily degrade the visual quality of the project area to low vividness, intactness, and unity. However, because this effect is temporary, would last no longer than the construction duration, and is limited a small area, it would not substantially degrade the overall visual quality in the study area. In addition, the implementation of an environmental commitment to provide temporary construction barriers, as needed, between construction zones and residences, as described in Section 2.9 of Chapter 2, Alternatives, would make this effect less than significant.

Effect VIS-5: Affect the Existing Visual Character or Quality of the Site and Its Surroundings as a Result of Construction, Operations, and Maintenance

This effect is the same as described above under The Rivers APA. The Rivers Alternative B would require compliance with recent USACE policies regarding woody vegetation on levees, and removal of all mature woody vegetation on the levee and within 15 feet of the toe on both sides of the levee would highly degrade the visual character and quality of the area for all viewer groups. Although an environmental commitment has been made by WSAFCA to minimize vegetation removal to the extent possible (Section 2.9, Chapter 2, Alternatives), this effect remains significant and unavoidable, and no feasible mitigation is available to reduce this effect.

Effect VIS-6: Conflict with Local Visual Resource Policies

This effect is the same as described above under The Rivers APA. The Rivers Alternative B would require the removal of all vegetation within the construction footprint and all woody vegetation within the levee prism, as well as within 15 feet from the levee toe on both sides. This removal of vegetation would conflict with local visual policies. Because vegetation in many areas would not be allowed to be replanted, as discussed in Effect VIS-5, no feasible mitigation is available to reduce the effect. This effect would be significant and unavoidable.

Section 5.17
Recreation—
The Rivers Early Implementation Project

5.17.1 Affected Environment

This section describes the affected environment for recreation in The Rivers EIP project area, including regulatory and environmental setting.

5.17.1.1 Regulatory Setting

5.17.1.1.1 Federal and State

No Federal or state plans, policies, regulations, or laws related to recreation resources apply to The Rivers EIP.

5.17.1.1.2 Local

The following local plans related to recreation may apply to implementation of The Rivers EIP. Please see Section 3.14.2.1, Regulatory Setting, for a more complete description of each plan.

- *City of West Sacramento General Plan*
- *City of West Sacramento Parks Master Plan*
- *Sacramento Riverfront Master Plan*
- *West Sacramento Bicycle and Pedestrian Path Master Plan*
- *Yolo County General Plan*

5.17.1.2 Environmental Setting

The Rivers EIP project area has a fairly wide vegetated berm with some informal social trails between the levee and the river, and this berm attracts some visitors for fishing, walking, running, and visiting the waterfront. Although access to this area is technically considered trespassing, the City's Police Department and Reclamation District 811 generally do not prosecute for informal recreational use (Shpak pers. comm. 2009). Bryte Park, a City of West Sacramento community park that is described in the Program Area Affected Environment, is located at the landside toe of the Sacramento River North Levee at the western end of The Rivers EIP project area.

5.17.2 Environmental Consequences

This section describes the analysis of effects relating to recreation resources for The Rivers EIP. It describes the methods used to determine the effects of the proposed project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and any applicable mitigation

measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.15.3.3, Effects and Mitigation Measures.

5.17.2.1 Assessment Methods

Effects on recreation related to implementation of The Rivers EIP were evaluated qualitatively. Generally, construction activities could result in a short-term loss of recreation opportunities by disrupting use of recreation areas or recreational boating corridors. A long-term effect could occur if a recreation opportunity is eliminated or the quality of that opportunity is severely reduced as a result of permanent project-related structures or operations. Long-term beneficial effects could occur if new or enhanced recreation opportunities are created through implementation of the project.

5.17.2.2 Determination of Effects

For this analysis, an effect pertaining to recreation was considered significant if it would result in any of the following environmental effects, which are based on professional practice and State CEQA Guidelines Appendix G (14 CCR 15000 *et seq*.):

- increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur or be accelerated;
- include recreation facilities or require the construction or expansion of recreation facilities that might have a significant physical effect on the environment;
- substantially restrict or reduce the availability or quality of existing recreation opportunities in the project vicinity; or
- implement operational or construction-related activities related to the placement of project facilities that would cause a substantial long-term disruption of any institutionally recognized recreation activities. Institutionally recognized recreation activities are those associated with an established publicly or privately operated recreation facility, or those actively administered or promoted by a public or private entity.

5.17.3 Effects and Mitigation Measures

5.17.3.1 No Action Alternative

The No Action Alternative would continue the existing deficiencies along the portion of the Sacramento River North Levee reach encompassed by The Rivers EIP project area (i.e., no levee improvements would be implemented). This means continued or even potentially increased risk that the Sacramento River North Levee could fail due to under-seepage, slope stability, or geometry issues, Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the recreation program analysis (Section 3.15.3.3.1). A catastrophic levee failure would result in flooding and inundation that could significantly damage existing facilities and infrastructure and erode soil, uproot plants, and otherwise damage substrate by hydraulic force. This would render recreation facilities, informal recreation areas, and trails unusable until cleanup and restoration activities could be undertaken. It is possible that after a catastrophic flood event, recreation facilities may never be fully restored to

their former condition, permanently reducing the quality and/or quantity of recreation opportunities in the area. In addition, scenic vistas for existing and future recreation facilities could be damaged irreparably or for an extended period of time which would reduce the enjoyment derived by recreationists. Given the uncertainty of the occurrence or magnitude of such an event, potential effects on recreation cannot be quantified based on available information.

It is assumed that under the No Action Alternative, compliance with USACE's guidance regarding vegetation on levees would occur. This could result in the removal of a substantial amount of vegetation at The Rivers EIP project area, causing a significant effect on recreation similar to program Effect REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor.

5.17.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on recreation. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Significant	Significant and unavoidable	No feasible mitigation
REC-4: Permanent Loss of Recreation Facilities or Opportunities	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A

Effect REC-1: Temporary Disruption of Recreation Opportunities during Construction

Bryte Park, a City of West Sacramento community park, is located at the landside toe of the Sacramento River North Levee, adjacent to the western end of The Rivers APA project site. In addition to this formal recreation facility, informal recreation activities occur along the levee in The Rivers APA project area, and on the adjacent waterside berm. These activities include fishing, walking, biking, running, and visiting the waterfront.

It is not anticipated that any portion of Bryte Park would need to be closed to accommodate construction activities. However, temporary disruption of the informal recreation activities would occur during construction when the levee crown and adjacent construction and staging areas are closed to public access. Additionally, proximity to construction equipment and activities may degrade recreational experiences on the waterside berm. However, this effect is temporary and there are alternative locations for these types of recreation activities in the city. With implementation of the environmental commitment requiring notification of construction area closure (described in Section 2.9, Chapter 2, Alternatives) to ensure public safety and provide closure notice in advance of construction activities, this temporary effect would be less than significant. No mitigation is required.

Effect REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor

Implementation of The Rivers APA would follow USACE's policies regarding vegetation on levees. This would require removal of a substantial amount of mature trees and vegetation from the bank of the Sacramento River in The Rivers APA area, as the new policy forbids woody vegetation on the slopes and crown of the levee or within 15 feet of the waterside and landside levee toes. These zones would be maintained free of woody vegetation in perpetuity.

Many recreation activities rely on or are significantly enhanced by the presence of mature woody vegetation. Anglers rely on trees to provide shade during fishing activities, and wildlife viewers are attracted to areas with mature woody vegetation because of the wealth of wildlife such vegetation supports. Many other users, including pedestrians, bicyclists, equestrians and boaters also rely on this woody vegetation for shade, and for the visual character it contributes to the landscape (visual effects of permanent vegetation removal are discussed in Section5.16, "Visual Resources").

The majority of informal recreational uses on the levee and berm in and around The Rivers APA project area are tied to the mature riparian forest that characterizes the levee. These uses include fishing, wildlife viewing, walking, bicycling, and boating. Permanent loss of the woody vegetation on and within 15 feet of the Sacramento River North Levee would substantially reduce the quality of existing recreation activities in the area, and is therefore considered significant. No feasible mitigation is available to reduce this effect to a lesser level.

Effect REC-4: Permanent Loss of Recreation Facilities or Opportunities

As described in the Environmental Setting section above, Bryte Park, a West Sacramento community park, sits right at the landside toe of the existing levee toward the western end of The Rivers EIP project area. A running track and a soccer field are the closest park facilities to the levee. Neither construction activities nor expansion of the levee footprint are planned to intrude into the park, but if project activities were to damage or require removal of facilities at Bryte Park, it would be considered a significant effect, given the dearth of formal recreational facilities in the Bryte/Broderick neighborhoods. However, WSAFCA has committed to rebuilding all formal park facilities removed during construction activities (see the environmental commitment to rebuild affected formal park facilities described in Section 2.9, Chapter 2, Alternatives). With implementation of this environmental commitment, any affected park facilities would be rebuilt after construction of the project, and there would be no permanent loss of recreation opportunities. This effect would therefore be less than significant. No mitigation is required.

Effect REC-6: Long-Term Increase in Recreation Opportunities

As described in Chapter 2, Alternatives, The Rivers APA includes construction of new recreation facilities, including a paved bicycle/pedestrian levee crown trail, a meandering pedestrian trail parallel to the levee crown trail leading to a landing near the river, and interpretive signage. These new facilities would constitute an upgrade in quantity, quality, and safety to the existing facilities at The Rivers EIP project area, as well as an increase in recreation opportunities for the city. These recreation enhancements would also advance the policies of the planning documents listed below.

- *City of West Sacramento General Plan,*
- *City of West Sacramento Parks Master Plan,*

- *Sacramento Riverfront Master Plan,*
- *West Sacramento Bicycle and Pedestrian Path Master Plan, and*
- *Yolo County General Plan*.

This effect is considered beneficial.

5.17.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on recreation. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
REC-1: Temporary Disruption of Recreation Opportunities during Construction	Less than significant	N/A	N/A
REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor	Significant	Significant and unavoidable—no feasible mitigation	N/A
REC-4: Permanent Loss of Recreation Facilities or Opportunities	Less than significant	N/A	N/A
REC-6: Long-Term Increase in Recreation Opportunities	Beneficial	N/A	N/A

Effect REC-1: Temporary Disruption of Recreation Opportunities during Construction

This effect is the same as described above under The Rivers APA. With implementation of the environmental commitment requiring notification of construction area closure to ensure public safety and provide closure notice in advance of construction activities (described in Section 2.9, Chapter 2, Alternatives), temporary disruption of recreation opportunities at The Rivers Alternative B site would be less than significant. No mitigation is required.

Effect REC-3: Long-Term Reduction in Quality of Existing Recreation Opportunities in the Levee Corridor

This effect is the same as described above under The Rivers APA. This effect is considered significant. No feasible mitigation is available to reduce this effect to a lesser level.

Effect REC-4: Permanent Loss of Recreation Facilities or Opportunities

As described in the Environmental Setting section above, Bryte Park, a West Sacramento community park, sits right at the landside toe of the existing levee toward the western end of The Rivers EIP project area. A running track and a soccer field are the closest park facilities to the levee. Neither construction activities nor expansion of the levee footprint are planned to intrude into the park, but if project activities were to damage or require removal of facilities at Bryte Park, it would be considered a significant effect, given the dearth of formal recreational facilities in the Bryte/Broderick neighborhoods. However, WSAFCA has committed to rebuilding all formal park

facilities removed during construction activities (see the environmental commitment to rebuild affected formal park facilities described in Section 2.9, Chapter 2, Alternatives). With implementation of this environmental commitment, any affected park facilities would be rebuilt after construction of the project, and there would be no permanent loss of recreation opportunities. This effect would therefore be less than significant. No mitigation is required.

Effect REC-6: Long-Term Increase in Recreation Opportunities

As described in Chapter 2, Alternatives, The Rivers Alternative B includes construction of new recreation facilities, including a paved bicycle/pedestrian levee crown trail, a meandering pedestrian trail parallel to the levee crown trail leading to a landing near the river, and interpretive signage. These new facilities would constitute an upgrade in quantity, quality, and safety to the existing facilities at The Rivers EIP project area, as well as an increase in recreation opportunities for the city. These recreation enhancements would also advance the policies of the planning documents listed below.

- *City of West Sacramento General Plan,*
- *City of West Sacramento Parks Master Plan,*
- *Sacramento Riverfront Master Plan,*
- *West Sacramento Bicycle and Pedestrian Path Master Plan, and*
- *Yolo County General Plan*.

This effect is considered beneficial.

Section 5.18
Utilities and Public Services—The Rivers Early Implementation Project

5.18.1 Affected Environment

This section describes the affected environment for utilities and public services in The Rivers EIP project area, including regulatory and environmental setting.

5.18.1.1 Regulatory Setting

5.18.1.1.1 State

The following state policies or agencies related to utilities and public services may apply to implementation of The Rivers EIP. Please see Section 3.16.2.1, Regulatory Setting, for a more complete description of each policy.

- California Public Utilities Commission
- California Integrated Waste Management Act

5.18.1.1.2 Local

The following local policies related to utilities and public services may apply to implementation of The Rivers EIP. Please see Section 3.16.2.1, Regulatory Setting, for a more complete description of each policy.

- *City of West Sacramento General Plan*

5.18.1.2 Environmental Setting

This section discusses the environmental setting related to utilities and public services in The Rivers EIP project area.

5.18.1.2.1 Utilities and Service Systems

Table 5.18-1 lists aboveground and underground utilities in The Rivers EIP project area.

Table 5.18-1. Utilities Located in The Rivers Project Area

Approximate Stations	Utility	Size	Owner
70+80	Access Manhole	N/A	Unknown
71+90	Access Manhole	N/A	Unknown
70+00–71+00	6-inch Water Main	6 inches	COWS
71+00	4-inch Water Main	4 inches	COWS
71+00–83+70	Telephone	N/A	AT&T
71+00–77+75	Electric	N/A	PG&E

Approximate Stations	Utility	Size	Owner
71+00–88+00	Electric	N/A	PG&E
92+50–118+00	2-inch Gas Line	2 inches	PG&E
92+50–118+00	Electric Line	N/A	PG&E
92+50–118+00	Telephone Line	N/A	AT&T
102+00–118+00	2-inch Gas Line	2 inches	PG&E
102+00–118+00	6-inch Sanity Sewer	6 inches	COWS
102+00–118+00	Electric Line	N/A	PG&E
102+00–118+00	Telephone Line	N/A	AT&T
102+50–105+00	8-inch Water Main	8 inches	COWS
106+00–115+00	Telephone Line	N/A	AT&T
107+00	15-inch Storm Drain	15 inches	WSRD
113+25	6-inch Sanitary Sewer	6 inches	COWS
115+50	15-inch Storm Drain w/Outfall	15 inches	WSRD

Source: HDR 2007 (Appendix D).

5.18.1.2.2 Public Services

Fire Protection

The City's Fire Department has the mission of protecting life, environment, and property within the city of West Sacramento. The fire station servicing The Rivers EIP project area is Station 44. It is open 24 hours a day, 7 days a week. Firefighters work 24-hour tours of duty.

Police Protection

The Police Department provides a full range of police services to the residents of West Sacramento 24 hours a day, 7 days a week.

The Police Department is staffed with 75 sworn officers and 39 civilian full-time employees. Other positions include part-time police officers, parking enforcement officers, reserve police officers, and volunteers.

The department is broken into three geographic "beats". Beat 1 patrols the northern portion of the City including the Bryte and Broderick areas, and is responsible for The Rivers EIP project area. Beat 2 encompasses the central City along West Capitol Avenue and Beat 3 is responsible for the area south of the DWSC (Arsenault pers. comm.)

Emergency Medical Services

No hospitals are located within the city of West Sacramento. The nearest hospital is Sutter General Hospital, which is 3.7 miles from West Sacramento at 29th Street in Sacramento.

5.18.2 Environmental Consequences

This section describes the environmental consequences relating to utilities and public services for The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.16.3.3, Effects and Mitigation Measures.

5.18.2.1 Assessment Methods

This evaluation of utilities and public services is based on information obtained from:

- review of relevant documents and Web sites to obtain information regarding known public services and utilities in the study area,
- analysis of geographic map research to determine locations of existing utilities and public services for program components, and
- telephone calls and e-mail correspondence to area utility/service providers.

5.18.2.2 Determination of Effects

For this analysis, an effect pertaining to utilities and public services was analyzed under NEPA and CEQA if it would result in any of the following environmental effects, which are based on NEPA standards, State CEQA Guidelines Appendix G (14 CCR 15000 *et seq.*), and standards of professional practice:

- require the construction or expansion of electrical or natural gas transmission or distribution facilities;
- require the construction or expansion of a water conveyance or wastewater treatment facility or require new or expanded water supply entitlements;
- require the construction of new or expanded stormwater drainage facilities;
- require the construction or expansion of wastewater treatment facilities;
- cause the capacity of a solid waste landfill to be reached sooner than it would without the program;
- require the construction or expansion of communications facilities (telephone, cell, cable, satellite dish);
- significantly affect public utility facilities that are located underground or aboveground along the local roadways from program construction activities;
- create an increased need for new fire protection, police protection, or ambulance services or significantly affect existing emergency response times or facilities; or
- intersect with major infrastructure components, such as bridges or overpasses, requiring relocation of the components.

5.18.3 Effects and Mitigation Measures

5.18.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to utilities or service systems would occur and none of these services would therefore be interrupted or damaged. Therefore, there would be no effect on this resource under the No Action Alternative.

However, because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability and geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Utilities and Public Services program analysis (Section 3.16.3.3.1).

In summary, those effects could include destruction, damage, or contamination of water delivery infrastructure, utility lines, water or wastewater piping .Varying levels of damage could be done to public service structures as well, causing delays in response from fire and police protection and delays in commuting to the nearest hospital to seek medical attention.

5.18.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on utilities and public service systems. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	Significant and unavoidable	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training
Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A

Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service

Construction of The Rivers APA would result in the relocation of several underground utilities. Utilities within the levee prism include water, electricity, telephone, gas, and sanitary sewer lines; a storm drain; and two utility holes. According to Federal and CVFPB requirements, utilities are not allowed within the official level prism (defined by a 20-foot width along the crown and 3:1 slope ratio landside and waterside). The top portion of a levee that falls outside the official levee prism is called freeboard. Utilities are allowed to be placed within the freeboard portion of a levee. All of the existing utilities within The Rivers EIP project area may be relocated within the freeboard and would be temporarily out of service during relocation activities. Throughout the duration of construction, up to 147 days, utilities may be temporarily disrupted at 11 residential units.

During excavation activities, utilities would be intersected on each side of the levee, reconnected and temporarily rerouted to pass over the levee through the duration of construction. After cutoff wall construction, utility lines would be relocated within the freeboard of the levee. As noted in the environmental commitments, Section 2.9 of Chapter 2, Alternatives, WSAFCA would provide assistance for residents to relocate during construction activities and provide compensation to residents for reasonable rent and living expenses incurred due to relocation. In accordance with the Uniform Act, residents would be provided with decent, safe, and sanitary housing. Although disruption of utility services would be temporary and short in duration and the implementation of PUB-MM-1 would reduce the disruption of service, Effect PUB-1 would be significant and unavoidable.

Mitigation

Mitigation Measure PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training

WSAFCA will ensure the following measures are implemented to avoid and minimize potential damage to utility and service disruptions during construction. Implementing these measures will help ensure existing utilities are not damaged and that service interruptions are minimized.

- Obtain utility excavation or encroachment permits as necessary before initiating any work with the potential to affect utility lines, and include all necessary permit terms in construction contract specifications.
- Before starting construction, coordinate with utility providers in the area to locate existing lines. Avoid the relocation of utilities when possible. Provide notification of potential interruptions in services to the appropriate agencies.
- Before starting construction, verify utility locations through field surveys and Underground Service Alerts. Clearly mark any buried utility lines in the area of construction before any earthmoving activity.
- Before starting construction, prepare a response plan to address potential accidental damage to a utility line. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities to ensure the safety of the public and the workers. Contractors will conduct worker training to respond to these situations.
- Stage utility relocations to minimize service interruptions.

Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction

Implementation of The Rivers APA may generate up to 69,000 cubic yards of levee material that would require disposal. A portion of the material could be disposed of on-site and used for new levee construction, as long as it is suitable material. Disposal of the soil material would occur if soil characteristics make it infeasible for reuse as levee material, or the soil is determined to have contaminants that would require appropriate disposal. Embankment fill material excavated to construct levee improvements would be evaluated for reuse after excavation and prior to disposal. Soil requiring disposal as part of The Rivers APA would likely be transported to the Yolo County Central Landfill; however, the location of the landfill used for disposal of spoil material and other construction-related waste may be determined by the construction contractor at the time of construction activity based on capacity, type of waste, and other factors. Only those landfills

determined to have the ability to accommodate the construction disposal needs of The Rivers APA would be used.

As of fall 2009, the remaining capacity for the Yolo County Central Landfill is 37,108,000 cubic yards. Some of the disposed soils may be deemed suitable by the Yolo County Central Landfill for other beneficial uses. These soils would only be temporarily stored at the landfill and would not have an effect on its overcall capacity. The current landfill closure projection is in 2070, which takes into account disposal growth rate, including both beneficial and non-beneficial soil materials. Assuming all of the estimated 69,000 cubic yards of soil would require permanent disposal, The Rivers APA implementation would represent less than 1% of the remaining capacity of the Yolo County Central Landfill. However, the option of beneficial re-use is likely to reduce the cubic yards of soil that require permanent disposal. These facts combined with the fact that the landfill has sufficient capacity remaining throughout the projected life of the WSLIP (15 to 20 years), would make this effect less than significant. No mitigation is required. (Borrego pers. comm.)

5.18.3.3 The Rivers Alternative B

Implementation of The Rivers APA would result in the following effects on utilities and public service systems. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service	Significant	Significant and unavoidable	PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training
Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction	Less than significant	N/A	N/A

Effect PUB-1: Damage of Public Utility Infrastructure and Disruption of Service

Construction of The Rivers Alternative B would result in the relocation of several underground utilities. Utilities within the levee prism include water, electricity, telephone, gas, and sanitary sewer lines; a storm drain; and two utility holes. According to Federal and CVFPB requirements, utilities are not allowed within the official level prism (defined by a 20-foot width along the crown and 3:1 slope ratio landside and waterside). The top portion of a levee that falls outside the official levee prism is called freeboard. Utilities are allowed to be placed within the freeboard portion of a levee. All of the existing utilities within The Rivers EIP project area may be relocated within the freeboard and would be temporarily out of service during relocation activities. Throughout the duration of construction, up to 57 days, utilities may be temporarily disrupted at 11 to 15 residential units.

During excavation activities, utilities would be intersected on each side of the levee, reconnected and temporarily rerouted to pass over the levee through the duration of construction. After cutoff wall construction, utility lines would be relocated within the freeboard of the levee. As noted in the environmental commitments, Section 2.9 of Chapter 2, Alternatives, WSAFCA would provide assistance for residents to relocate during construction activities and provide compensation to residents for reasonable rent and living expenses incurred due to relocation. In accordance with the

Uniform Act, residents would be provided with decent, safe, and sanitary housing. Although disruption of utility services would be temporary and short in duration and the implementation of PUB-MM-1 would reduce the disruption of service, Effect PUB-1 would be significant and unavoidable.

Mitigation

Mitigation Measure PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training

Effect PUB-2: Exceed the Capacity or Shorten the Lifespan of Local Solid Waste Landfills as a Result of Construction

Implementation of The Rivers Alternative B may generate up to 11,000 cubic yards of levee material that would require disposal. A portion of the material could be disposed of on-site and used for new levee construction, as long as it is suitable material. Disposal of the soil material would occur if soil characteristics make it infeasible for reuse as levee material, or the soil is determined to have contaminants that would require appropriate disposal. Embankment fill material excavated to construct levee improvements would be evaluated for reuse after excavation and prior to disposal. Soil requiring disposal as part of The Rivers Alternative B would likely be transported to the Yolo County Central Landfill; however, the location of the landfill used for disposal of spoil material and other construction-related waste may be determined by the construction contractor at the time of construction activity based on capacity, type of waste, and other factors. Only those landfills determined to have the ability to accommodate the construction disposal needs of The Rivers Alternative B would be used.

As of fall 2009, the remaining capacity for the Yolo County Central Landfill is 37,108,000 cubic yards. Some of the disposed soils may be deemed suitable by the Yolo County Central Landfill for other beneficial uses. These soils would only be temporarily stored at the landfill and would not have an effect on its overcall capacity. The current landfill closure projection is in 2070, which takes into account disposal growth rate, including both beneficial and non-beneficial soil materials. Assuming all of the estimated 11,000 cubic yards of soil would require permanent disposal, The Rivers Alternative B implementation would represent less than 1% of the remaining capacity of the Yolo County Central Landfill. However, the option of beneficial re-use is likely to reduce the cubic yards of soil that require permanent disposal. These facts combined with the fact that the landfill has sufficient capacity remaining throughout the projected life of the WSLIP (15 to 20 years), would make this effect less than significant. No mitigation is required. (Borrego pers. comm.)

Section 5.19
Public Health and Environmental Hazards—The Rivers Early Implementation Project

5.19.1 Affected Environment

This section describes the affected environment for public health and environmental hazards in The Rivers EIP project area, including the regulatory and environmental setting.

5.19.1.1 Regulatory Setting

5.19.1.1.1 Federal

The following Federal policies related to public health and environmental hazards may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.17.2.1, Regulatory Setting, for a more complete description of each policy discussion.

- Resource Conservation and Recovery Act
- Comprehensive Environmental Response, Compensation, and Liability Act

5.19.1.1.2 State

The following state policies related to public health and environmental hazards may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.17.2.1, Regulatory Setting, for a more complete description of each policy discussion.

- Hazardous Materials Release Response Plans and Inventory Act of 1985
- Hazardous Waste Control Act
- Emergency Services Act

5.19.1.1.3 Local

The following local policies related to public health and environmental hazards may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.17.2.1, Regulatory Setting, for a more complete description of each policy discussion.

- *Draft 2030 Countywide General Plan* for Yolo County, Health and Safety Element
- *City of West Sacramento General Plan*

5.19.1.2 Environmental Setting

This section discusses the environmental setting related to public health and environmental hazards in The Rivers EIP project area.

5.19.1.2.1 Hazardous Materials

Hazardous materials are chemicals and other substances defined as hazardous by Federal and state laws and regulations. In general, these materials are substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may have harmful effects on public health or the environment during their use or when released to the environment. Hazardous materials also include waste chemicals and spilled materials.

The EDR Report identified a hazardous site in the DWR Maintenance Yard located just west of the project area on Riverbank Road. Multiple leaking underground storage tanks, removed in 1994, are the source of contamination at this site. DWR has monitored the site for groundwater contamination since 2004 and has established the boundary of a groundwater petroleum plume originating from the tank location and spanning the eastern portion of the DWR maintenance facility, northwestern corner of Bryte Park, and a small western portion of The Rivers EIP project area. The groundwater petroleum plume would be affected by construction activities for The Rivers EIP. The effects from this construction are evaluated below under The Rivers EIP Environmental Consequences section and in Section 5.5, Water Quality and Groundwater Resources.

5.19.1.2.2 Wildland Fires

The area surrounding The Rivers EIP project area is not considered a fire-prone area.

5.19.1.2.3 Emergency Response and Evacuation

Emergency response and evacuation services for the project area are provided by the various departments in the city of West Sacramento and through Yolo County Sheriff, Fire, and Emergency Services Departments. The city of West Sacramento has entered into a joint flood operation agreement with the local reclamation districts. The agreement has established procedures to protect the health, safety, welfare and property of the residents and landowners in the program area. Procedures described in the document consist of flood preparedness, information management, monitoring, flood fighting, and flood evacuation.

5.19.1.2.4 Schools

Two schools are located within 0.25 mile of The Rivers EIP project area. These schools are Bryte Elementary School, located at 637 Todhunter Avenue and Riverbank Elementary School, located at 1100 Carrie Street.

5.19.2 Environmental Consequences

This section describes the environmental consequences relating to public health and environmental hazards for the proposed The Rivers EIP. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.17.3.3, Effects and Mitigation Measures.

5.19.2.1 Assessment Methods

The evaluation of potential effects on public health and environmental hazards addresses the potential for health and safety hazards during construction of The Rivers EIP alternatives. The analysis includes evaluation of (1) the potential effects related to construction activities on workers, and (2) general safety of and hazards to both workers and the public posed by the construction and implementation of the levee alternatives.

5.19.2.2 Determination of Effects

Criteria used for determining the significance of an effect on public health and environmental hazards are based on the environmental checklist included in Appendix G (14 CCR 15000 *et seq*.) of the State CEQA Guidelines as well as professional standards and practices. The proposed project was considered to cause a significant effect if it would:

- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;
- emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- be located on a site that is on a list of hazardous materials sites compiled pursuant to California Government Code 65962.5, and as a result would create a significant hazard to the public or the environment;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- significantly affect drinking water quality.

5.19.3 Effects and Mitigation Measures

5.19.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. No construction-related effects relating to public health and environmental hazards would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage, slope stability, or geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city of the magnitude described in the Public Health and Hazards program analysis (Section 3.17.3.3.1). In summary, those effects could include creation of hazardous conditions for the public and environment through the spread of hazardous materials, structural damage to homes and other buildings, damage to electrical and gas delivery systems, and

contamination of the water supply. Receding floodwaters could also leave behind dangerous strains of mold and serve as breeding grounds for mosquitoes and other disease vectors. A major flood event could also disrupt or place severe strain on critical public services such as fire protection, police protection, and emergency medical assistance.

5.19.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on public health and environmental hazards. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
Effect PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	Less than significant	WQ-MM-1: Implement Measures to Maintain Surface Water quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (if necessary) Environmental Site Assessment Investigations and Implement Required Measures
Effect PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
Effect PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A
Effect PH-5: Hazardous Materials Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School	Significant	Less than significant	PH-MM-1: Complete Phase I and Phase II (if necessary) Environmental Site Assessment Investigations and Implement Required Measures PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities

Effect PH-1: Incidental Release of Hazardous Materials during Construction

The Rivers APA implementation would require the use of hazardous materials such as fuels and lubricants to operate construction equipment and vehicles such as excavators, compactors, haul trucks, and loaders. Bentonite (a non-hazardous material) would be transported to sites where slurry cutoff wall construction would occur. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction. However, fuels, and lubricants could be accidentally released into the environment at the construction site and along haul routes, causing environmental or human exposure to these hazards. Risks to water quality (surface, ground, and drinking water) associated with incidental release of these materials are addressed in Section 5.5, Water Quality and Groundwater Resources.

As discussed in Section 5.5, the implementation of environmental commitments, including a SWPPP, a bentonite slurry spill contingency plan (BSSCP), an SPCCP, and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2, would ensure that the risk of accidental spills and releases into

the environment would be minimal and that the effect on water quality would be less than significant.

In addition, WSAFCA would be required to comply with applicable Federal, state, and local laws, which would reduce the potential for accidental release of hazardous materials during their transport and use. Consequently, the risk of incidental release of hazardous materials during their transport and use in The Rivers APA construction activities is low and the effect is considered less than significant.

Effect PH-2: Exposure to Hazardous Materials Encountered at Project Site

There is the potential that known or previously undocumented hazardous materials could be encountered at The Rivers APA project site. Excavation and construction activities at or near areas of currently unrecorded soil or groundwater contamination could result in the exposure of construction workers, the general public, and the environment to hazardous materials such as petroleum hydrocarbons, pesticides, herbicides, fertilizers, contaminated debris, or elevated levels of other chemicals that could be hazardous. There is one known site located adjacent to and partially within The Rivers APA project site that contains hazardous materials: a petroleum groundwater plume at the DWR Maintenance Yard, described in the Environmental Setting. Construction activities in the vicinity of known or potentially unknown recognized environmental concerns could result in public health hazards.

Implementation of Mitigation Measures PH-MM-1, WQ-MM-1, and WQ-MM-2 described in Section 5.5, Water Quality and Groundwater Resources, and the implementation of environmental commitments of a SWPPP, a BSSCP, and SPCCP, as described in Section 2.9 of Chapter 2, Alternatives, would ensure that the effect on public health and the environment would be less than significant.

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures

WSAFCA will conduct Phase I ESAs and, if necessary, Phase II ESAs or other appropriate testing. If necessary, the assessment will include an analysis of soil or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations before construction activities begin.

Recommendations in Phase I and Phase II ESAs to address any contamination that is found will be implemented before initiating ground-disturbing activities. In addition, WSAFCA will implement the following measures before ground-disturbing or demolition activities begin, in order to reduce health hazards associated with potential exposure to hazardous substances:

- Prepare a site plan that identifies any necessary remediation activities appropriate for proposed land uses, including excavation and removal of contaminated soils, and redistribution of clean fill material on the project site. The plan will include measures that ensure the safe transport,

use, and disposal of contaminated soil and building debris removed from the site, as well as any other hazardous materials. In the event that contaminated groundwater is encountered during site excavation activities, the contractor will report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The contractor will be required to comply with the plan and applicable Federal, state, and local laws.

- Retain licensed contractors to remove all underground storage tanks.
- Notify the appropriate Federal, state, and local agencies if evidence of previously undiscovered soil or groundwater contamination is encountered during construction activities. Any contaminated areas will be cleaned up in accordance with the recommendations of Yolo County Environmental Health Division, Central Valley RWQCB, California Department of Toxic Substances Control, or other appropriate Federal, state or local regulatory agencies.,
- Prepare a worker health and safety plan before the start of construction activities that indentifies, at a minimum, all contaminants that could be encountered during construction activity; all appropriate worker, public health, and environmental protection equipment and procedures to be used during project activities; emergency response procedures; the most direct route to the nearest hospitals; and a Site Safety Officer. The plan will describe actions to be taken should hazardous materials be encountered on site, including protocols for handling hazardous materials and preventing their spread, and emergency procedures to be taken in the event of a spill.

Effect PH-3: Safety Hazards from the Construction Site and Vehicles

Under The Rivers APA, construction workers would operate vehicles and other mechanical equipment that, if used improperly, could result in safety hazards at the construction site. WSAFCA would ensure that all workers are properly trained to operate equipment. Safety precautions would be followed at all times during construction to avoid accidents. WSAFCA also would require that all workers have a valid driver's license and insurance. These measures would ensure that this effect would be less than significant.

In addition, people may walk, ride bicycles, or otherwise use the levee during the construction period. The staging of the equipment when construction is not underway (i.e., weekends, holidays, or overnight, if construction is not performed 24 hours per day) may pose a threat to public safety if the equipment is not properly secured. Proper signage and detours would be provided as stated in the environmental commitment to provide notification of construction area closure (described in Section 2.9, Chapter 2, Alternatives). These measures would reduce the risk to the public when construction is underway and when it is not. Therefore, this effect would be less than significant. No mitigation is required.

Effect PH-4: Protection of People or Structures from Flood Hazards

All levees have the potential to fail, regardless of design. USACE has set forth guidelines for levee design. Under The Rivers APA, the Sacramento River North Levee would be improved using methods that meet engineering requirements set forth by both USACE and the Reclamation Board. In addition, this levee would be improved to meet FEMA 200-year flood protection certification. This would be an improvement compared to the existing level of flood protection. Therefore, this effect would be beneficial.

Effect PH-5: Hazardous Materials, Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School

There are two schools located within 0.25 mile of The Rivers APA project site. These schools are Bryte Elementary School located at 637 Todhunter Avenue and Riverbank Elementary School, located at 1100 Carrie Street. Construction of The Rivers APA would involve the use of potentially hazardous materials, such as fuels (gasoline and diesel) and oils, and may expose the contaminated groundwater plume located to the west of the project site. Undocumented contaminated soil or water may also be found during construction. The effect of exposure to incidental release of these hazardous materials by school-aged children would be significant.

WSAFCA would be required to comply with applicable Federal, state, and local laws related to transport and use of hazardous materials. Consequently, the risk of incidental release of hazardous materials near existing or proposed schools during their transport and use during program construction activities would be low. These measures, along with the implementation of Mitigation Measures PH-MM-1 and PH-MM-2 would ensure that this effect is less than significant.

Mitigation

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures

Mitigation Measure PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities

WSAFCA will provide written notification of projects to each of the affected schools and the Washington Unified School District within 30 days prior to certification of the EIS/EIR and will consult with Washington Unified School District regarding potential effects on school children from hazards associated with project construction.

5.19.3.3 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on public health and environmental hazards. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect PH-1: Incidental Release of Hazardous Materials during Construction	Less than significant	N/A	N/A
Effect PH-2: Exposure to Hazardous Materials Encountered at Project Site	Significant	Less than significant	WQ-MM-1: Implement Measures to Maintain Surface Water quality and Groundwater Quality WQ-MM-2: Implement Provisions for Dewatering PH-MM-1: Complete Phase I and Phase II (if necessary) Environmental Site Assessment Investigations and Implement Required Measures
Effect PH-3: Safety Hazards from the Construction Site and Vehicles	Less than significant	N/A	N/A
Effect PH-4: Protection of People or Structures from Flood Hazards	Beneficial	N/A	N/A

Effect	Finding	With Mitigation	Mitigation Measure
Effect PH-5: Hazardous Materials Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School	Significant	Less than significant	PH-MM-1: Complete Phase I and Phase II (if necessary) Environmental Site Assessment Investigations and Implement Required Measures PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities

Effect PH-1: Incidental Release of Hazardous Materials during Construction

The Rivers Alternative B implementation would require the use of hazardous materials such as fuels and lubricants to operate construction equipment and vehicles such as excavators, compactors, haul trucks, and loaders. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction. However, fuels, and lubricants could be accidentally released into the environment at the construction site and along haul routes, causing environmental or human exposure to these hazards. Risks to water quality (surface, ground, and drinking water) associated with incidental release of these materials are addressed in Section 5.5, Water Quality and Groundwater Resources.

As discussed in Section 5.5, the implementation of environmental commitments, including a SWPPP, an SPCCP, and the implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2, would ensure that the risk of accidental spills and releases into the environment would be minimal and that the effect on water quality would be less than significant.

In addition, WSAFCA would be required to comply with applicable Federal, state, and local laws, which would reduce the potential for accidental release of hazardous materials during their transport and use. Consequently, the risk of incidental release of hazardous materials during their transport and use in The Rivers Alternative B construction activities is low and the effect is considered less than significant.

Effect PH-2: Exposure to Hazardous Materials Encountered at Project Site

This effect is the same as described above under The Rivers APA. There is the potential that known or previously undocumented hazardous materials could be encountered at The Rivers Alternative B project site that could result in the exposure of construction workers, the general public, and the environment to hazardous materials. Implementation of Mitigation Measures PH-MM-1, WQ-MM-1, and WQ-MM-2 described in Section 5.5, Water Quality and Groundwater Resources, and the implementation of environmental commitments of a SWPPP and SPCCP, as described in Section 2.9 of Chapter 2, Alternatives, would ensure that the effect on public health and the environment would be less than significant.

Mitigation

Mitigation Measure WQ-MM-1 Implement Measures to Maintain Surface Water Quality and Groundwater Quality

Mitigation Measure WQ-MM-2: Implement Provisions for Dewatering

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures

Effect PH-3: Safety Hazards from the Construction Site and Vehicles

This effect is the same as described above under The Rivers APA. Under implementation of The Rivers Alternative B, construction workers would operate vehicles and other mechanical equipment that, if used improperly, could result in safety hazards at the construction site. WSAFCA would ensure that safety precautions would be followed at all times during construction to avoid accidents. This effect would be less than significant. No mitigation is required.

Effect PH-4: Protection of People or Structures from Flood Hazards

This effect is the same as described above under The Rivers APA. Under The Rivers Alternative B, the Sacramento River North Levee would be improved using methods that meet engineering requirements set forth by both USACE and the Reclamation Board. In addition, this levee would be improved to meet FEMA 200-year flood protection certification. This would be an improvement compared to the existing level of flood protection. Therefore, this effect would be beneficial.

Effect PH-5: Hazardous Materials, Substances, or Waste Handled or Emitted within 0.25 Mile of an Existing or Proposed School

This effect is the same as described above under The Rivers APA. There are two schools located within 0.25 mile of The Rivers Alternative B project site, and potential exposure to incidental release of these hazardous materials by school-aged children would be significant. WSAFCA would be required to comply with applicable Federal, state, and local laws related to transport and use of hazardous materials. Consequently, the risk of incidental release of hazardous materials near existing or proposed schools during their transport and use during program construction activities would be low. These measures, along with the implementation of Mitigation Measures PH-MM-1 and PH-MM-2 would ensure that this effect is less than significant.

Mitigation

Mitigation Measure PH-MM-1: Complete Phase I and Phase II (If Necessary) Environmental Site Assessment Investigations and Implement Required Measures

Mitigation Measure PH-MM-2: Notify Washington Unified School District and Applicable Schools Located within 0.25 Mile of Project Construction Activities

Section 5.20
Cultural Resources—The Rivers Early Implementation Project

5.20.1 Affected Environment

This section describes the affected environment for cultural resources in The Rivers EIP project area, including the regulatory and environmental setting.

5.20.1.1 Regulatory Setting

5.20.1.1.1 Federal

The following Federal policies related to cultural resources may apply to the implementation of The Rivers EIP. Please see the program information in Section 3.18.2.1, Regulatory Setting, for a more complete description of each policy.

- Section 106 of the National Historic Preservation Act
- Federal Historic Significance Criteria

5.20.1.1.2 State

The following state policy related to cultural resources may apply to the implementation of The Rivers EIP. Please see Section 3.18.2.1, Regulatory Setting, for a more complete description of each policy.

- State Historic Significance Criteria (14 CCR 15064.5(a)(3)(A–D))

5.20.1.1.3 Local

The following local policies related to cultural resources may apply to the implementation of The Rivers EIP. Please see Section 3.18.2.1, Regulatory Setting, for a more complete description of each policy.

- *Yolo County General Plan*
- *City of West Sacramento General Plan*

5.20.1.2 Environmental Setting

This section discusses the environmental setting related to cultural resources in the project study area for The Rivers EIP including the records searches and field survey methods used to evaluate cultural resource conditions, and a summary of known cultural resources.

5.20.1.2.1 Records Search

In October 2007, Jones & Stokes requested a search of database files from both the Northwest Information Center and the North Central Information Center of the California Historical Resources

Information System located at California State University, Sacramento and Sonoma State respectively (see Methods in the Program section above).

The Rivers EIP project area has been previously surveyed (Holman 1984; Johnson and Johnson 1974; Peak & Associates 1985, 2005; Woodward and Evans 1992). The majority of survey coverage in The Rivers project area was completed more than 10 years ago, necessitating a new survey in support of the proposed project (see Field Survey below).

The records search indicates that the Sacramento River Levee is located in the project area. One previously recorded cultural resource, archaeological site CA-YOL-25, is located within 0.25 mile of the project area. The Sacramento Levee (CA-YOL-25) is a Native American occupation mound recorded by Heizer (1934). The site has not been relocated and is presumed destroyed as a result of the original levee construction.

5.20.1.2.2 Shipwrecks Database

ICF Jones & Stokes consulted the California State Lands Commission's Shipwrecks Database (2009) to determine whether historic shipwrecks may be present in The Rivers EIP project area. The database was searched by selecting Yolo County in the search field, which generated a list of 12 shipwrecks in Yolo County. The database search yielded latitude and longitude coordinates for 11 of the shipwrecks, which were plotted using an online mapping program (http://www.itouchmap.com/latlong.html) to determine whether any of the shipwrecks were in the project area.

5.20.1.2.3 Field Survey

In October 2007, an ICF Jones & Stokes archaeologist conducted a reconnaissance-level survey of the proposed project area. Although the records search indicated that the project area had been previously surveyed, an additional reconnaissance review of the project area was deemed necessary to confirm the previous findings and to confirm coverage of the entire project area. The project area is located within heavily a developed area of West Sacramento and very little, if any, natural ground surface remains. The project area has been graded, landscaped, and developed. No previously unidentified archaeological resources were noted within the project area.

On February 5 and March 10, 2008, an ICF Jones & Stokes architectural historian conducted a field survey of the project area. As part of the field process, buildings, structures, and linear features 45 years old[1] or older were inspected, photographed, and documented (see Summary of Known Cultural Resources below).

5.20.1.2.4 Native American Consultation

In January 2008, ICF Jones & Stokes cultural resources staff contacted the Native American Heritage Commission (NAHC) to request a search of their Sacred Lands File. The NAHC staff responded in January 2008 with a list of Native American contacts for both Yolo and Solano Counties and the results of the sacred lands data base research that was negative for findings in The Rivers EIP project area.

[1] Although the NRHP typically only considers properties that are 50 years or older for listing, the Office of Historic Preservation (1995: 2) employs a 45-year threshold for the recordation of cultural resources because "there is commonly a five year lag between resource identification and the date that planning decisions are made."

The NAHC contact list included the following federally recognized Native American tribes:

- Rumsey Indian Rancheria of Wintun Indians
- Cortina Band of Wintun Indians (including the Wintun Environmental Protection Agency)
- Ione Band of Miwok Indians

The NAHC also provided contact information for the following federally non-recognized Native American group and individual:

- Kesner Flores
- Wilton Miwok Rancheria

ICF Jones & Stokes staff sent letters to the Native American contacts on the lists provided by NAHC. The correspondence included a map depicting the program corridor, a brief description of the proposed program, and a request for the contacts to share any knowledge or concerns they may have regarding cultural resources in or adjacent to the study area. ICF Jones & Stokes received a letter response dated April 2008 from Mr. Marshall McKay, Tribal Chairman for the Rumsey Band of Wintun Indians. Mr. McKay's letter stated his gratitude for the letter notification about the proposed levee alternatives and that he was not aware of any sites of religious or cultural importance in the program corridor. Mr. McKay also stated that the Rumsey Indian Rancheria of Wintun would like to be notified of any cultural finds unearthed during construction actions. ICF Jones & Stokes staff placed follow-up telephone calls to the letter recipients on June 5, 2009. Voice messages were left with the contacts. To date, no return phone calls have been received.

5.20.1.2.5 Additional Research and Consultation

In an effort to identify important historic people, events, and trends that may have been associated with the project area, an ICF Jones & Stokes historian conducted archival research at the California State Library and the California State Archives, Sacramento. ICF Jones & Stokes also sent project notification letters to the Yolo County Historical Museum, the Yolo County Historical Society, the Sacramento Archives and Museum Collection Center, and the Portuguese Historical and Cultural Society requesting information regarding cultural resources that may be located within the project area. No responses have been received to date.

5.20.1.2.6 Summary of Known Cultural Resources

Based on the record search and a review of historic maps, two cultural resources 45 years old or older were identified in The Rivers EIP project area. These consist of the Sacramento Levee and the Riverbank Elementary School. The two resources were evaluated for the NRHP and CRHR as part of this project. The results of the survey and evaluation of the two architectural properties are documented in the technical report prepared for this project and are summarized below.

Sacramento River Levee

A segment of the Sacramento River Levee is located in The Rivers EIP project area. This segment is an earthen levee extending in a roughly east to west direction along the southern bank of the Sacramento River in the southern portion of the Rivers Site. The Sacramento River Levee is part of a conglomeration of water control structures constructed in the Sacramento Valley between the mid-19th and mid-20th century as a response to heavy flooding in the area, which occurred repeatedly

between the 1850s and early 1910s. Construction and improvements on the levee began as early as the 1860s and continued until the early to mid-20th century as increasing development in the area led to a greater need for more substantial and extensive levees. The Sacramento River Levee appears to meet NRHP Criterion A and CRHR Criterion 1 for its association with flood control and water reclamation efforts in California.

Riverbank Elementary School

Riverbank Elementary School is located in The Rivers EIP project area just south of Riverbank Road. The school a collection of stucco and concrete buildings constructed as early as 1962. It was originally known as Washington High School and by 2006, became Golden State Middle School. Presently the school operates as Riverbank Elementary School. The property lacks historic and architectural significance as well as integrity. For this reason it does not appear to meet the criteria for the NRHP or CRHR.

5.20.2 Environmental Consequences

This section describes the environmental consequences relating to cultural resources in The Rivers EIP project area. It describes the methods used to determine the effects of the project and lists the thresholds used to conclude whether an effect would be significant. The effects that would result from implementation of The Rivers EIP, findings with or without mitigation, and applicable mitigation measures are presented in a summary table. These effects tier from the program analysis effects, described in Section 3.16.3.3, Effects and Mitigation Measures.

5.20.2.1 Assessment Methods

Evaluation of effects on cultural resources is based on information provided by literature review, records searches, historic map research, and consultation with Native Americans. This information was then compared to the type and location of proposed flood control and recreation improvements to determine whether effects would occur.

5.20.2.2 Determination of Effects

5.20.2.2.1 Federal Criteria

According to 36 CFR 800.5, an undertaking would have an adverse effect on historic properties if the effect alters the characteristics[2] that make a property eligible for inclusion in the NRHP. Such effects also would be considered adverse under NEPA. Adverse effects can occur when prehistoric or historic archaeological sites, structures, or objects listed in or eligible for listing in the NRHP are subjected to the following phenomena:

[2] Cultural resource managers often refer to these characteristics as character-defining elements or features. Character-defining features are those characteristics of a historic property, historical resource, or unique archaeological resource that convey its significance; the loss of character-defining elements impedes a property's ability to convey its historical significance. The importance of character-defining elements in cultural resource assessments is made clear in *National Register* Bulletin 15, which mentions "character" in this context 42 times (Andrus and Shrimpton 1997).

- physical destruction of or damage to all or part of the property;
- alteration of the property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines;
- removal of the property from its historic location;
- change in the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- neglect of the property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to a Native American tribe or Native Hawaiian organization; or
- transfer, lease, or sale of the property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

5.20.2.2.2 State Criteria

CEQA defines a significant impact on cultural resources in 14 CCR 15064.5(b) (1) and (2) as one with the potential to cause a substantial adverse change in the significance of a historical resource or unique archaeological resource. Substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired. The significance of a historical resource is materially impaired when a project results in demolition or material alteration in an adverse manner of those physical characteristics of a resource that:

- convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR;
- account for its inclusion in a local register of historical resources pursuant to PRC 5020.1(k) or its identification in a historical resources survey meeting the requirements of PRC 5024.1(g), unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

5.20.3 Effects and Mitigation Measures

5.20.3.1 No Action Alternative

The No Action Alternative represents the continuation of existing deficiencies along the portion of the Sacramento River North Levee reach in The Rivers EIP project area. No levee improvements would be made to increase the level of protection. Under the No Action Alternative, it is presumed that no ground-disturbing activities associated with levee repair and alternatives would occur.

Because no levee improvements would be made under the No Action Alternative, the risk that the Sacramento River North Levee could fail due to seepage or slope stability/geometry issues would continue. Failure of the Sacramento River North Levee, depending on the magnitude of the event, could cause catastrophic flooding of the entire city. If the Sacramento River North Levee were to fail, a cultural resource could be in the path of an inundation of debris and mud from that failure that could cause significant damage to or the complete destruction of the resource. Furthermore, emergency efforts to stop and repair a failed levee potentially would cause the same or more significant effects than those described for the proposed EIP. While the levee would be damaged, the potential extent of damage to the resource is unknown. It is also unknown whether these events would transpire and affect other cultural resources; therefore, further analysis of effects on cultural would be speculative. Federal agencies responsible for levee repairs would be responsible for compliance with Section 106, as would local governments responsible for carrying out Federal programs.

5.20.3.2 The Rivers Applicant Preferred Alternative

Implementation of The Rivers APA would result in the following effects on cultural resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than Significant	N/A	N/A
Effect CR-2: Change in the Significance of an Archaeological Resource	Significant	Significant and unavoidable	CR- MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan
Effect CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	Significant and Unavoidable	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes

A portion of the Sacramento River Levee is located in The Rivers EIP project area and appears to meet NRHP and CRHR criteria. WSAFCA would not demolish or substantially alter the physical characteristics of the levee or cause a major change to its engineering design or overall setting. The Sacramento River Levee would continue to convey its historical significance. Consequently, there would be no adverse effect on this resource as a result of the proposed construction. No mitigation is necessary.

Effect CR-2: Change in the Significance of an Archaeological Resource

Although the project area has been surveyed and no archaeological resources were identified in the project area, there is the possibility that construction would unearth archaeological materials from beneath the ground surface. Damage to such resources, if they meet the significance criteria of the

NRHP and/or the CRHR, would constitute a significant effect under CEQA (14 CCR 15064.5) and an adverse effect under Section 106 of the NHPA and NEPA. Therefore, the effect on archaeological resources would be significant. While implementation of Mitigation Measure CR-MM-1 (Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan) would reduce the intensity of the effect, the effect would still be significant and unavoidable.

Mitigation

Mitigation Measure CR-MM-1. Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan

In the event that archaeological resources are identified because of project-related ground disturbance, the WSAFCA will implement the inadvertent discovery procedures of the WSLIP Program HPMP. The HPMP will direct the Corps and WSAFCA's cultural resources management activities in the WSLIP Program study area, including The Rivers EIP project area. The HPMP will describe the stop-work and consulting party communication protocols, a research design and methods for treatment of inadvertent archaeological discoveries, and reporting requirements. Implementation of the HPMP will ensure that any archaeological resources discovered during construction will be protected from additional damage or treated in such a manner that effects to the resources are compensated through scientific excavation, analysis, reporting, and, as may be appropriate, public interpretation of the resources.

Effect CR-3: Disturbance of Native American and Historic-Period Human Remains

The project area is located in an area that is considered of moderate to high sensitivity for archaeological cultural remains, including burials. The potential for buried human remains to be unearthed and disturbed during ground-disturbing activities that would be associated with levee repair and alternative construction within the study area is considered high. The disturbance of any human remains is considered a significant effect. Implementation of the human remains discovery provisions in the program HPMP (Mitigation Measure CR-MM-2) would likely reduce the severity of this effect, but it would still be considered a significant and unavoidable effect.

Mitigation

Mitigation Measure CR-MM-2. Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

In the event that human remains are identified because of project-related ground disturbance, the WSAFCA will implement the human remains discovery procedures of the WSLIP Program HPMP. The HPMP will direct the Corps and WSAFCA's cultural resources management activities in the WSLIP Program study area, including The Rivers EIP project area. The HPMP will describe the stop-work and consulting party communication protocols, procedures for consulting with descendant communities, a research design and methods for treatment of human remains discoveries, and reporting requirements. Implementation of the HPMP will ensure that any human remains discovered during construction will be protected from additional damage or treated in such a manner that effects to the resources are compensated through scientific excavation, analysis, reporting, and, as may be appropriate, public interpretation of the resources.

5.20.3.2.2 The Rivers Alternative B

Implementation of The Rivers Alternative B would result in the following effects on cultural resources. A description of these effects is provided below the summary table.

Effect	Finding	With Mitigation	Mitigation Measure
Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes	Less than Significant	N/A	N/A
Effect CR-2: Change in the Significance of an Archaeological Resource	Significant	Significant and unavoidable	CR- MM-1: Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan
Effect CR-3: Disturbance of Native American and Historic-Period Human Remains	Significant	Significant and Unavoidable	CR-MM-2: Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Effect CR-1: Effects on Architectural (Built Environment) Resources and Cultural Landscapes

This effect is the same as described above under The Rivers Applicant Preferred Alternative. The Rivers Alternative B would not cause an adverse effect on significant architectural resources as a result of the proposed construction. No mitigation is necessary.

Effect CR-2: Change in the Significance of an Archaeological Resource

This effect is the same as described above under The Rivers Applicant Preferred Alternative. There is the possibility that construction would unearth archaeological materials from beneath the ground surface. Implementation of Mitigation Measure CR-MM-1 would reduce the intensity of this effect, but the effect would still be significant and unavoidable.

Mitigation

Mitigation Measure CR-MM-1. Implement Inadvertent Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Effect CR-3: Disturbance of Native American and Historic-Period Human Remains

This effect is the same as described above under The Rivers Applicant Preferred Alternative. The disturbance of any human remains would be considered a significant effect. Implementation of Mitigation Measure CR-MM-2 would likely reduce the severity of this effect, but it would still be considered a significant and unavoidable effect.

Mitigation

Mitigation Measure CR-MM-2. Implement Human Remains Discovery Procedures of the WSLIP Program Historic Properties Management Plan

Chapter 6
Growth-Inducing and Cumulative Effects

6.1 Growth-Inducing Effects

6.1.1 Introduction

NEPA and CEQA require that an EIS and EIR discuss how a project, if implemented, could induce growth. This chapter presents an analysis of the potential growth-inducing effects of the WSLIP. This chapter includes:

- background information related to growth inducement,
- the methods used to analyze growth-inducing effects, and
- the effect conclusions.

6.1.2 Affected Environment

6.1.2.1 Regulatory Setting

6.1.2.1.1 NEPA and CEQA Requirements

Under authority of NEPA, CEQ regulations require EISs to consider the potential indirect effects of a proposed action. The indirect effects of an action include those that occur later in time or farther away in distance, but are still reasonably foreseeable, and "may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate" (40 CFR Section 1508.8[b]).

In addition, Section 21100(b)(5) of CEQA requires an EIR to discuss how a proposed project, if implemented, may induce growth and the impacts of that induced growth (see also State CEQA Guidelines Section 15126). CEQA requires an EIR to discuss specifically "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (State CEQA Guidelines Section 15126.2[d]).

6.1.2.1.2 Regulations Regarding Floodplain Development

Executive Order 11988 (May 24, 1977) requires a Federal agency, when taking an action, to avoid short- and long-term adverse effects associated with the occupancy and the modification of a floodplain, and it must avoid direct and indirect support of floodplain development whenever there is a reasonable and feasible alternative. If the only reasonable and feasible alternative involves siting in a floodplain, the agency must minimize potential harm to or in the floodplain and explain why the action is proposed in the floodplain.

In February 1978, the Water Resources Council issued Floodplain Management Guidelines for Implementing Executive Order 11988. These guidelines provide analysis of the Executive Order, definitions of key terms, and an eight-step decision-making process for carrying out the Executive

Order's directives. The process contained in the Water Resources Council guidelines incorporates the basic requirements of the Executive Order. Briefly, the eight-step process is outlined below, followed by discussion of the WSLIP's application of the process to demonstrate compliance.

- **Step 1: Determine if a proposed action is in the base floodplain (100-year floodplain or 1% chance flood or 500-year or 0.2% if the action falls under the definition of critical, discussed separately below).** The WSLIP and proposed EIPs are activities located primarily on the high ground and levees around West Sacramento and as such are not directly within the base 100-year floodplain but would improve the current level of protection ultimately to the goal of 200-year protection. The proposed improvements are described in Chapter 2 at the program level and Chapters 4 and 5 at the project level (for CHP Academy and The Rivers, respectively), including location, construction methods, and operations and maintenance activities.

  The Water Resources Council Floodplain Management Guidelines presented the concept of a critical action. While there is no precise definition of critical action, the guidelines (under Part II, Decision-Making Process, Step 1C) outline the parameters of critical actions. To summarize, as noted in the guidelines, a critical action is "any activity for which even a slight chance of flooding is too great." This definition is intended to apply to Federal actions where that action would involve facilities or infrastructure that are sensitive to flooding, where the consequences of flooding would be severe in terms of ability to provide essential community services or to protect life and welfare (as described in the criteria above). Under the WSLIP, it is the levee improvement program itself that will reduce the chance of flooding, rather than being sensitive to or compromised by flooding; i.e., its purpose is to manage flood risk. Therefore, the WSLIP and its EIPs are not considered a critical action because they are intended to withstand flood conditions, reduce flood risk, and increase flood protection.

- **Step 2: Provide public review.** The NEPA/CEQA process provides for public disclosure; this EIS/EIR is one instrument for public review of the WSLIP and proposed EIPs. As discussed in Chapter 1, USACE and WSAFCA have established a proactive multi-media outreach program to communicate the WSLIP and allow for public review and disclosure. The approach to the outreach program has been to go beyond the guidelines and requirements of NEPA and CEQA for public noticing to ensure the affected community and other interested stakeholders are informed, engaged, and involved through an accessible, open, and transparent process. Thus far, the outreach program has included the following actions:
  - four scoping meetings for the environmental document (two for the joint NEPA/CEQA document and two prior for CEQA only);
  - publication of notices in local newspapers of major circulation;
  - publication in the *Federal Register*;
  - notification to the State Clearinghouse;
  - posting NEPA notices on the USACE website;
  - posting CEQA notices and project information on the City/WSAFCA website;
  - publication of feature articles in the City Lights newsletter, distributed quarterly to all city residents for updates and information about City business;

- presentation and discussion of the status of the WSLIP at various public meetings for elected boards and commissions;
- direct mailing to residents within proximity of proposed construction activities;
- phone calls to public agencies;
- small-group meetings with interested stakeholders; and
- posting of notices in public places.

As the proposed improvements and EIS/EIR are further developed, the outreach program will continue in a broad sense via the methods listed above and will expand through more targeted specific outreach to residents and businesses who might be more directly affected by construction or operation of the proposed improvements.

To date, the results of the outreach program have been very favorable, constructive, and supportive for the WSLIP. The tone and substance of the input has been consistent with the very favorable response for the voter-approved assessment to fund the local share of the WSLIP. Comments received from the public have been considered to refine the project description and the environmental analysis.

A more detailed accounting of the scoping process is provided in Appendix A.

- **Step 3: Identify and evaluate reasonable and feasible alternatives to locating in the base floodplain.** Firstly, it should be noted that previously West Sacramento has not been mapped in the base floodplain, and land use planning decisions have been based on studies demonstrating protection from the base flood. Only recent studies (as described in Chapter 1) based on evolving levee standards now necessitate improvements to continue maintaining protection above the base floodplain. The proposed action (the WSLIP) is specifically targeted to provide such improvements and exceed the level of protection beyond the base flood to that of the 0.5% chance (200-year) flood event or better.

  General engineering and environmental analyses have been performed for the program- and project-level alternatives for the WSLIP, following an identification and screening process discussed in Chapter 2, Alternatives. Detailed analyses were performed for the project-level alternatives and have found the proposed action to be the only practicable alternative that achieves the objectives of the project. Construction of the WSLIP will remove thousands of transportation, commercial, institutional, and residential structures and nearly 50,000 residents out of the base floodplain.

- **Step 4: Identify the impacts of the proposed action.** This EIS/EIR analyzes the environmental effects potentially resulting from the WSLIP and proposed EIPs per NEPA/CEQA requirements. Review under the Endangered Species Act, Clean Water Act, Clean Air Act, and other Federal and state environmental regulations is also occurring in coordination with the EIS/EIR. Program-level impacts are disclosed and analyzed in Chapter 3 and project-level impacts for the EIPs are in Chapters 4 and 5 (for CHP Academy and The Rivers, respectively). In brief, the CHP Academy EIP may have temporary construction-related effects on roadways, air quality from heavy equipment use, and biological resources (due to temporary disruption of or construction near habitat). The Rivers EIP may have temporary construction-related effects on roadways; temporary effects on biological resources (due to temporary disruption of or construction near habitat); and temporary construction-related effects on residents due to noise generation, changes in visual quality, and interruption in utility service and property access.

- **Step 5: Minimize threats to life and property and to natural and beneficial floodplain values. Restore and preserve natural and beneficial floodplain values.** The WSLIP and proposed EIPs would reduce flood risk for West Sacramento and increase protection for life and property within the city. The existing levee system was originally designed and constructed to provide a minimum level of protection from the base flood and ensure that human life and structures are out of the floodplain. The WSLIP target is to maintain and increase the level of protection beyond that of the base flood to a minimum 200-year protection (0.5% chance). The existing floodplain on the waterside of the levee would be largely unchanged; however, setback levees are evaluated as part of the program and may be proposed as appropriate measures for some segments, thereby allowing for preservation and enhancement of riparian habitat and other natural and beneficial floodplain values.
- **Step 6: Reevaluate alternatives.** This EIS/EIR is part of a step-wise evaluation process to refine the alternatives through public review as well as through resource and regulatory agency input in consultation for compliance with the Clean Water Act, Endangered Species Act, and other project authorizations. The alternatives have been evaluated at the planning level for initial screening (in Chapter 2), through programmatic analysis for secondary screening (Chapter 3), and re-evaluation through project-level analysis (Chapters 4 and 5). The alternatives are also continuously evaluated on a technical basis through independent review of the design documents (i.e., plans and specifications) at several levels of design development, including expert peer review by a Board of Senior Consultants. The recommendations and design refinements resulting from these reviews have been incorporated in the program description and environmental commitments (Chapter 2), resource analyses and findings (Chapters 3, 4, and 5), and project-level analyses and mitigation measures (Chapters 4 and 5). This level of screening analysis has demonstrated that the proposed actions at the CHP Academy and The Rivers sites are the most practicable alternatives.
- **Step 7: Issue findings and a public explanation.** To conclude the NEPA process, a record of decision for the project-level action (EIPs) will be publically issued following the Final EIS. To conclude the CEQA process, findings will be publically issued following the Final EIR. A public workshop will be conducted during the draft document stage and a public hearing will be held to decide on project adoption by WSAFCA as an action under CEQA.
- **Step 8: Implement the action.** WSAFCA intends to construct the EIPs as soon as possible based on conclusion of the project approval processes, targeted to be initiated in the 2011 construction season.

In conclusion, the WSLIP and proposed EIPs would reduce the risk of flood loss and minimize the impact of floods on human health, safety, and welfare by improving existing flood management infrastructure, and would increase protection for existing urban development and remove a potential obstacle to future growth. Because there is no reasonable and feasible alternative to the urban development indirectly associated with the WSLIP and proposed EIPs and because the actions will improve flood protection, it is not in conflict with Executive Order 11988. This EIS/EIR further complies with this Executive Order by identifying the most reasonable and feasible flood improvement alternative and disclosing the potential effects of actions under the WSLIP that may lead to growth or other direct and indirect effects. Additionally, Chapter 1, Introduction, and Chapter 2, Alternatives, explain why levee improvements are necessary for West Sacramento, regardless of how they may affect future development and growth.

6.1.2.2 Environmental Setting

The information in this section provides context for the analysis and helps the reader understand the structure of the analysis. This background information includes the legal requirements for analyzing growth-inducing effects in CEQA and NEPA documents.

6.1.2.2.1 Growth Projections

California's population is estimated at 36 million people in 2005 and is expected to rise to nearly 44 million by 2025 (U.S. Bureau of the Census 2008).

Locally, the population of West Sacramento has grown from 31,615 people in 2000 to an estimated 47,782 as of January 1, 2009 (California Department of Finance 2009). According to the Sacramento Area Council of Government's population growth and distribution data, 87,402 people are projected to reside in the city of West Sacramento in 2035 (Sacramento Area Council of Government 2008). Anticipated growth projections described in the General Plan Update are discussed below.

6.1.2.2.2 Current and Planned West Sacramento Development

West Sacramento has experienced extensive growth over the last decade. This growth has been generally consistent with the *City of West Sacramento General Plan* but has slowed considerably as a result of current economic conditions and the pending floodplain mapping (Rikala pers. comm.). The General Plan Update is in the development stages and set to be released in 2010. The General Plan Update will describe the development anticipated to occur by the year 2030 and disclose the fact that growth and development in the city are expected to be strongly tied to flood control improvements because of restrictions by FEMA resulting from existing levee conditions.

The General Plan Update is expected to characterize new development and recently completed development. The City released an alternatives report in October 2009 describing three alternative land use scenarios showing different levels of development over the next 20 years. Public meetings will be scheduled to provide for public comment on the alternatives and the City will eventually approve a preferred alternative to further evaluate for the General Plan Update.

Table 6-1 presents preliminary data describing the three alternatives that are in consideration. The base case describes present conditions and likely future developments in the absence of any changes to existing general plan. The future growth was planned with the assumption that the area will have adequate flood protection. The base case data have been analyzed in the following documents.

- *City of West Sacramento General Plan EIR* (1990)
- *City of West Sacramento General Plan 2000 Update SEIR* (2000)
- *Triangle Specific Plan EIR* (1993)
- *Washington Specific Plan EIR* (1995)
- *Southport Framework Plan EIR* (1994)
- *Triangle Specific Plan SEIR*; anticipated certification October 2009 (2009)

To account for growth relative to flood risk management, the City has in place the following measures (introduced in Chapter 1).

- An Emergency Operations Plan, which includes a Flood Plan and an Evacuation Plan, is reviewed yearly with a more comprehensive update minimally every three years to accommodate changes in population and the built environment.
- The City's municipal code (Chapter 15.50) requires new developments to provide 200-year protection or pay into an in-lieu fee program to fund WSAFCA's flood protection efforts.

6.1.2.2.3 Emergency Response and Evacuation

The City of West Sacramento, RD 537, and RD 900 have entered a joint flood operation agreement. The agreement has established procedures to protect the health, safety, welfare and property of the residents and landowners in the program area. Procedures described in the document consist of flood preparedness, information management, monitoring, flood fighting, and flood evacuation. As discussed above, emergency response is addressed through a Flood Plan and Evacuation Plan as components of the City's Emergency Operations Plan (EOP). City residents and other interested parties are informed of updates to the EOP through the City's website and *City Lights*, a publication specifically for the City of West Sacramento and distributed to all residents. In addition, the Fire Department regularly conducts community outreach and informs residents on the latest information related to emergency preparedness.

Emergency response and evacuation services for the program area are provided by the various departments in the City of West Sacramento and cities nearest to the program area and through Yolo County and Solano County Sheriff, Fire, and Emergency Services Departments. The City established an Emergency Operations Center, a special City facility opened in times of major emergencies. The purpose of the center, also connected to a regional resource system, is to act as the central point of communications directing personnel and resources. The Emergency Operations Center will be managed and operated by City staff members who are trained to fulfill emergency functions. The City has also established a City Slow Rise Flood Plan published on the City's website describing a series of seven stages in which specific actions are taken as water rises in the Sacramento River and Yolo Bypass. Residents are informed of emergencies through several media, including TV, radio, print, the Reverse 911 System, website, fire and law enforcement loudspeakers on vehicles, door–to-door and, as needed, loudspeakers on helicopters. The City is prepared to evacuate citizens with special care needs and those housed within special care facilities during the general public voluntary evacuation stage.

6.1.2.2.4 Previous Flood Improvement Efforts

As described in previous sections, the city lies within the natural floodplain of the Sacramento River, which bounds the city along the east. It is made up of reclaimed land protected from floods by levees and the Yolo and Sacramento Bypass systems. West Sacramento has many residents and the supporting infrastructure and property; however, the people and property require a level of protection greater than that provided currently. Over the past several decades, as portions of the West Sacramento area were converted from agricultural lands and open space to developed areas, many agencies have implemented projects to improve flood control for West Sacramento.

USACE, CVFPB, WSAFCA, and West Sacramento have a long history of working to improve flood protection in the West Sacramento region. Levees have been improved to current standards and development has proceeded with the understanding that levees provide adequate protection for the existing land uses.

The comprehensive levee evaluation has shown that the levees protecting the city need improvements to meet FEMA's minimum acceptable level of flood protection.

Table 6-1. West Sacramento General Plan Update Alternatives

Alternative	Net New Dwelling Units	Net New Population	Net New Employment
Base Case	21,129	48,761	41,369
Alternative A	29,832	65,883	56,042
Alternative B	22,550	50,893	32,175
Alternative C	30,554	72,959	51,125

6.1.3 Environmental Consequences

An action that removes an obstacle to growth is considered to be growth inducing. As such, where flood risk may be seen as an obstacle to growth in an area, levee improvements that would reduce that risk may be considered to remove an obstacle to growth and thereby be indirectly growth-inducing.

Growth inducement itself is not an environmental effect, but it may lead to environmental effects. These environmental effects may include increased demand for utilities and public services, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, and conversion of agricultural and open space land to urban uses. Growth within a floodplain area increases the risk to people or property from flooding.

However, if the induced growth is consistent with or provided for by the adopted land use plans and growth management plans and policies for the area affected (e.g., city and county general plans, specific plans, transportation management plans), those plans may ensure that these effects are either less than significant or mitigated to a less-than-significant level. In some instances, significant and unavoidable impacts would occur as a result of implementation of land use plans. All effects associated with this planned growth are the responsibility of the city or county in which the growth takes place, developers, or other entities proposing or approving the development. Local land use plans provide for land use development patterns and growth policies that encourage orderly urban development supported by adequate urban public services such as water supply, roadway infrastructure, sewer services, and solid waste services.

6.1.3.1 Assessment Methods

Implementing the WSLIP and increasing flood protection in West Sacramento could result in indirect growth-inducing effects by removing an obstacle to growth. All of the treatments would result in the same outcome related to growth: improved flood protection allowing for certification of the levees and an increased rate of development. As such, growth effects under the No Action Alternative and under the WSLIP as an overall program are described, without differentiation among the various alternatives or reaches evaluated in this EIS/EIR.

6.1.3.2 Effects and Mitigation Measures

6.1.3.2.1 No Action Alternative

Under the No Action Alternative, WSAFCA would not implement flood control alternatives. The levees protecting the city would continue to deteriorate and necessitate improvements to meet FEMA's and the state's minimum acceptable levels of flood protection. In addition, the associated risk to human health and safety, property, and the adverse economic impact that serious flooding could cause would continue, and the risk of a catastrophic flood would remain high. Again, however, regular operations and maintenance of the levee system would continue as prescribed and as presently executed by the local maintaining entities, but not improvements would be implemented. Further detail on the No Action Alternative is provided in Section 2.4 of Chapter 2, Alternatives.

As described in Chapter 2, Alternatives, despite the likelihood of state- or Federal-led implementation of repairs, for the purposes of evaluating impacts under the No Action Alternative, the EIS/EIR assumes that the improvements would not occur. This assumption provides the most conservative approach for disclosure and comparison of potential effects. Therefore, the No Action Alternative assumes no levee repair or strengthening would be implemented, the purpose and objectives would not be met, and flood risk would continue.

6.1.3.2.2 Proposed Program

Removing Obstacles to Growth—Flood Protection

The proposed program is necessary to protect people and property, but it would also remove an obstacle to growth currently planned for undeveloped lands in West Sacramento. The current level of flood protection results in increased costs to develop and insure properties. As such, it provides a disincentive to develop in West Sacramento. Improving flood control, and the subsequent improvement in FEMA rating, would remove an obstacle to growth because it could make development easier or more attractive. As such, the indirect growth-inducing effects of the WSLIP are the direct effects of implementing the planned development in West Sacramento. The City is developing a General Plan Update, for which effects have not yet been identified or evaluated. However, it is expected that the General Plan Update will include considerable development of undeveloped lands and that this would result in environmental effects.

Environmental effects associated with this growth include the conversion of agricultural and other open land to urban uses that may significantly affect agricultural and biological resources (including special-status species and other sensitive resources) at those locations subject to such conversion. In addition, this conversion could lead to changes in stormwater runoff quantity and quality, and effects on cultural resources. Increases in population could lead to effects on air and water quality, traffic and noise conditions, and increases in the demand for such public services as schools, fire, police, sewer, solid waste disposal, and electrical and gas utilities. In addition, the expansion of such services could result in additional significant effects. The effects of this growth will be analyzed in the *West Sacramento 2030 General Plan Update SEIR*. Mitigation measures could include locating the growth in areas where sensitive resources are absent, minimizing the loss of these resources, or replacing any loss. The City of West Sacramento could impose feasible mitigation measures on development that would reduce or eliminate these effects. Ultimately, the effects associated with growth in West Sacramento are the responsibility of West Sacramento and specific project proponents.

Although the WSLIP may be considered growth-inducing because it would remove an obstacle to growth, the proposed levee alternatives are the most reasonable and feasible alternatives (see Section 2.2.2, Alternative Screening Process) and are necessary to protect the existing population and property. As such, the growth-inducing effect of the WSLIP would be an unavoidable secondary effect of necessary flood improvements for West Sacramento.

6.2 Cumulative Effects

6.2.1 Introduction

The cumulative effects analysis determines the combined effect of the WSLIP and other closely related, reasonably foreseeable, projects. This chapter introduces the methods used to evaluate cumulative effects, lists related projects, and describes their relationship to the WSLIP, identifies cumulative effects by resource area, and recommends mitigation for significant cumulative effects.

6.2.2 Approach to Cumulative Effect Analysis

6.2.2.1 Legal Requirements

NEPA regulations and State CEQA Guidelines require that the cumulative effects of a proposed project be addressed under NEPA when the cumulative effects are expected to be significant, and under CEQA when the project's incremental effect is cumulatively considerable (Guidelines 15130[a], 40 CFR 1508.25[a][2]). Cumulative effects are effects on the environment that result from the incremental effects of a proposed action when added to other past, present, and reasonably foreseeable future actions (Guidelines 15355[b], 40 CFR 1508.7). Such effects can result from individually minor but collectively significant actions taking place over time.

Section 15130 of the State CEQA Guidelines states that the discussion of cumulative impacts need not provide as much detail as the discussion of impacts attributable to the project alone. The level of detail should be guided by what is practical and reasonable.

6.2.2.2 Methods

According to the State CEQA Guidelines (Section 15130), an adequate discussion of significant cumulative impacts should contain the following elements:

- an analysis of related future projects or planned development that would affect resources in the project area similar to those affected by the proposed project,
- a summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and
- a reasonable analysis of the cumulative impacts of the relevant projects. An EIR must examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

To identify the related projects, the State CEQA Guidelines (15130[b]) recommend either the list or projection approach. This analysis uses the list approach, which entails listing past, present, and probable future projects producing related or cumulative effects, including, if necessary, those

projects outside the control of WSAFCA. NEPA does not provide specific guidance as to how to conduct a cumulative effect assessment; however, the list approach has been effective at disclosing cumulative effects under NEPA.

A list of past, current, and probable future projects was compiled for the cumulative setting. These projects (cumulative projects) include other flood control projects affecting the Sacramento River, recreation projects in the region, restoration and other water-related projects in and near the Sacramento River that could affect fish or vegetation on the waterside of levees, and development in the West Sacramento area that could result in effects and benefits similar to those of the WSLIP. Other cumulative projects considered include:

- potential flood protection projects requesting Section 408 approval,
- City of West Sacramento development projects, and
- projects affecting fish and wildlife that use the WSLIP area.

In addition, regional plans were reviewed to characterize development trends and growth projections in Yolo County. These projects are considered with the WSLIP to determine if the combined effects of all of the projects would result in significant cumulative effects.

6.2.3 Projects Considered for the Cumulative Assessment

6.2.3.1 Flood Protection Projects

According to the CEQ regulations, when determining the scope of the action assessment, similar actions must be considered. Similar actions are defined as actions that, when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same environmental assessment. It should do so when the best way to assess adequately the combined effects of similar actions or reasonable alternatives to such actions is to treat them in a single environmental assessment (40 CFR §1508.25[a][3]). (Council on Environmental Quality 1997.)

The following descriptions of related or similar flood protection projects include those that are under active consideration, have been proposed, or have some form of environmental documentation complete. In addition, these projects have the potential to affect the same resources and fall within the same geographic scope and are therefore to be cumulatively considered with the WSLIP. In particular, those resources are biological resources (riparian habitat and wildlife disturbance), hydrology, and geomorphology. The geographic scope of consideration for effects on those resources is the Sacramento Valley region and Sacramento River system, respectively.

6.2.3.1.1 West Sacramento Levee Improvements Program Early Implementation Projects

Along with the WSLIP, WSAFCA launched a parallel process for identifying smaller-scale improvements that may be candidates for EIPs to address urgent needs and can be planned and designed in advance of or concurrent with the overall program. Essentially, these projects cover critical areas where the levee deficiency is well-defined and the most suitable treatments are known. The I Street Bridge project constructed in 2008 was one such example and the CHP Academy and The Rivers EIPs analyzed in this document are additional examples.

6.2.3.1.2 Sacramento Area Flood Control Agency Levee Integrity Program

SAFCA's long-term program to improve the Natomas Basin levee system is described in Section 1.6.

6.2.3.1.3 Upper Yuba River Levee Improvement Project

The Upper Yuba River Levee Improvement Project (UYLIP) proposes additional levee improvements to a segment of the upper Yuba River in Yuba County. The proposed improvement includes the installation of slurry walls and seepage berms (from Simpson Lane to the Yuba Goldfields). Previous repairs have occurred on this levee segment. Further studies determined additional work was necessary to provide 200-year flood protection for 40,000 residents in south Yuba County. Environmental review and Section 408 permission for the UYLIP is expected in 2010, and construction is expected to occur in 2010 and 2011.

6.2.3.1.4 Sutter Basin Project

The Sutter Basin Feasibility Study was re-initiated in 2006. The study scope focuses on providing flood damage reduction to the urban areas of Yuba City, Live Oak, Gridley, and Biggs in the Sutter Bypass – Feather River sub-basin and developing a flood warning system for the outlying areas of the sub-basin. Additional study objectives include ecosystem restoration and recreation. The study process involves 6 planning steps that range from problem identification (e.g., geotechnical exploration) to the formulation, evaluation, and selection of alternatives. Problem identification studies are expected to be completed in 2010. Formulation and evaluation of alternatives are expected to begin in 2010. Final environmental documents are expected to be completed in 2012. In addition to the feasibility study, an EIP is under development to improve the west levee of the Feather River from Thermalito Afterbay to south of Yuba City. The EIP is at a 10% level of design.

6.2.3.1.5 Feather River Levee Repair Project

The Feather River Levee Repair Project is a multi-phased levee improvement program on the left bank of the Feather River. It includes approximately 13 miles of levees within the Three Rivers Levee Improvement Authority area in south Yuba County. With the exception of approximately 4 miles of improvements in Phase 4, all other improvements have been constructed. Project features included seepage berms, cutoff walls, and 6-mile setback levee. It reduces flood stages in the river by approximately 1.5 feet and provides 200-year protection to over 40,000 residents.

6.2.3.1.6 Feather River Setback Levee at Star Bend

Levee District No. 1 of Sutter County has constructed the Feather River Setback Levee at Star Bend on the west bank of the Feather River near the eastern boundary of Sutter County. The project replaces a segment of the river's existing levee that currently constricts flood flows in the river and presents an unacceptably high risk for levee failure because of seepage. Construction of the setback levee removes the constriction and reduces water surface elevations in the region.

6.2.3.1.7 West Sacramento Project

The West Sacramento Project is described in Section 1.6.

6.2.3.1.8 Sacramento River Bank Protection Project

The Sac Bank Project is described in Section 1.6.

6.2.3.1.9 Sacramento Urban Levee Program

DWR is evaluating sites similar to the USACE's Sacramento River Bank Protection Project. The state will repair 19 critical erosion sites, one of which is in West Sacramento at RM 55.8.

6.2.3.1.10 Flood Control and Coastal Storm Emergency Act

PL 84-99 is described in Section 1.6.

6.2.3.1.11 North Delta Flood Control and Ecosystem Restoration Project

The purpose of the North Delta Flood Control and Ecosystem Restoration Project is to implement flood control improvements in the northeast Delta in a manner that benefits aquatic and terrestrial habitats, species, and ecological processes. The North Delta project area includes the North and South Fork Mokelumne Rivers and adjacent channels downstream of I-5 and upstream of the San Joaquin River. Solution components being considered for flood control include bridge replacement, setback levees, dredging, island bypass systems, and island detention systems. The project will include ecosystem restoration and science actions in this area, and improving and enhancing recreation opportunities. In support of the environmental review process, a notice of preparation (NOP)/NOI was prepared and public scoping was held in 2003. An EIR was prepared in 2008, but the project is not currently funded for implementation.

6.2.3.1.12 CALFED Levees Program

The goal of the CALFED Levees Program is to uniformly improve Delta levees by modifying cross sections, raising levee height, widening levee crowns, flattening levee slopes, or constructing stability berms. Estimates predict that 520 miles of levees need improvement and maintenance to meet the PL 84-99 standard for Delta levees. The program continues to implement levee improvements throughout the Delta, including the south Delta area.

6.2.3.2 Potential Projects Requesting Section 408 Approval

A number of projects in the Central Valley may request Section 408 approval. Table 6.2 below summarizes potential projects with Section 408 requests. These projects are listed for context.

Table 6-2. Potential Projects Requesting Section 408 Approval

Project	Lead Agency/Agencies	Estimated Date for Section 408 Permission
West Sacramento EIPs 2011	WSAFCA	Summer 2010
RD 17 100-year Seepage Repair Project	RD 17, San Joaquin County	Late 2010
River Islands Levee Alteration	City of Lathrop	Late 2010
Natomas Levee Improvement Project	SAFCA	Winter/Spring 2010
Upper Yuba River Levee Improvement Project	TRLIA	Summer 2010/-mid-2011

6.2.3.3 Relevant Land Use Plans

Relevant land use plans are included to assess past, present, or reasonably foreseeable development actions in the city that may affect the same resources as the WSLIP, or provide for the restoration, preservation, or enhancement of those resources.

6.2.3.3.1 Yolo Natural Heritage Program Habitat Conservation Plan

The Yolo Natural Heritage Program is a county-wide Natural Communities Conservation Plan/Habitat Conservation Plan for the 653,629-acre planning area that provides habitat for many special-status and at-risk species found in five dominant habitats/natural communities. The Yolo Natural Heritage Program will describe the measures that will be undertaken to conserve important biological resources, obtain permits for urban growth and public infrastructure projects, and continue Yolo County's rich agricultural heritage (Yolo Natural Heritage Program 2008).

6.2.3.3.2 City of West Sacramento General Plan

The *City of West Sacramento General Plan* consists of two documents: the *General Plan Background Report* and the *General Plan Policy Document*. The *General Plan Background Report* inventories and analyzes existing conditions and trends in West Sacramento. The *Background Report*, which provides the formal supporting documentation for general plan policy, addresses 11 subject areas: land use, housing, population, economic conditions and fiscal considerations, transportation and circulation, public facilities and services, cultural and recreational resources, natural resources, health and safety, urban structure and design, and child care. The *Background Report* also includes as an appendix the *West Sacramento General Plan Community Concerns Summary Report* prepared following the issue identification process carried out in early 1988. The *City of West Sacramento General Plan Policy Document* includes the goals, policies, standards, implementation programs, quantified objectives, land use diagram, and circulation plan diagram that constitute the formal policy of the City of West Sacramento for land use, development, and environmental quality (City of West Sacramento 2000).

6.2.3.3.3 Washington Specific Plan

Adopted in 1996, the *Washington Specific Plan* area covers the northeast area of the City of West Sacramento. The EIP site lies within the plan area. The area includes plans for mixed use, residential, and commercial development. The CalSTRS building is currently under construction under the plan. It is constructed adjacent to and behind the Sacramento River levee, just south of the EIP project site (City of West Sacramento 1996).

6.2.3.3.4 Triangle Plan

Adopted in 1993, the *Triangle Plan* includes primarily mid-rise to high-rise office, high-density multiple family residential, ancillary retail, government, and institutional uses. Development is proposed to occur through 2012. The *Triangle Plan* outlines the creation of a mixed-use community of local and regional significance. The plan area is south of the project site with the Sacramento River as its eastern border (City of West Sacramento Department of Community Development 2000).

6.2.3.3.5 Southport Framework Plan

The Southport Framework Plan was adopted in 1995. Southport is a 7,180-acre site located in the southern portion of the city of West Sacramento. It is bounded by the DWSC on the north and west, the Sacramento River on the east, and the city limits on the south. Proposed land use in this area includes a mixture of residential, commercial, industrial, public/quasi-public, and parks and open space uses. It outlines provisions for 14,050 residential dwelling units, 17.2 million square feet of commercial uses, 21.1 million square feet of office/business park, 7.7 million square feet of industrial uses, 544 acres of public/quasi-public uses, and 915 acres of parks and open spaces at build out. The Southport Framework Plan was developed to provide an overall vision for the development of Southport with a goal of encouraging a development pattern that is an alternative to urban sprawl.

6.2.3.4 City of West Sacramento Development Projects

City development projects that have the potential to affect similar resource areas such as biological resources, air, and noise have been included for analysis.

6.2.3.4.1 Sacramento Riverfront Master Plan Improvement (River Walk)

This development will create a riverfront promenade, extending from The Rivers development on the north to the Stone Locks near the Port of Sacramento. The first three phases of the park, which extends from the Tower Bridge to the I Street Bridge, are completed. Phase 4 plans are to continue the pavement of the top of the levee to the Broderick Boat Ramp. Phase 5 of the riverfront improvements includes a promenade along the Triangle (described above), which is from the Tower Bridge to the Pioneer Bridge. The City currently also has a Resources Agency grant for Phase 5A of the project that expires in May 2011. Phase 6 will continue the River Walk pathway to Pioneer Bluff.

6.2.3.4.2 California Indian Heritage Center

The California Indian Heritage Center is described in Section 2.6.1.4.2.

6.2.3.4.3 Barge Canal Redevelopment

The City plans to further and enhance current use of the barge canal area for aquatic recreational activities, such as sailing, rowing, kayaking, and canoeing, and supports the establishment of a multi-use aquatic facility along the barge canal. Aquatic parks, boat houses, docks, and other support facilities for boating shall be deemed compatible uses along the DWSC and the barge canal within all land use designations. The City also promotes the development of important visual and scenic areas along the riverfront and barge canal for public access, including water-related activities and possible development of high-intensity and high-density urban uses.

6.2.3.4.4 City of West Sacramento Public Projects

The City of West Sacramento has a 25-year Capital Improvement Program that began in 2005. There are several public projects that are projected to occur over the next 20 years, depending on available funding. These projects are:

- new construction and improvements to bicycle, pedestrian, and transit facilities;

- roadway capacity improvements, including street widening of streets and interchange improvements;
- roadway signal and lighting improvements;
- landscape plantings and street and sidewalk maintenance;
- improvements and maintenance to water treatment, supply, storage, and pumping facilities;
- improvements to sanitary sewer and storm drainage facilities; and
- new construction and maintenance of municipal buildings such as City Hall, fire stations, and police stations.

6.2.3.4.5 City of West Sacramento Private Projects

Several private projects in the city of West Sacramento are in various stages of development and could occur over the next 20 years. Each of these projects fall within a specific plan area (as described above in Section 6.2.3.3, Relevant Land Use Plans). In the Triangle/Bridge District, there are two proposed projects:

- **Fulcrum Capital Properties.** This is a 58-acre site with approximately 3.6 million square feet of commercial (office & retail uses) and up to 2,787 housing units proposed for development.
- **River Edge.** This is a 15-acre site with a mixture of uses proposed for development, including 791 residential units, 84,480 square feet of retail space, and 30,000 square feet of office space.

In the Southport Framework Plan area there are five proposed projects:

- **Yarbrough**. The Yarbrough project is proposed to include approximately 3,004 residential units, 150,000 square feet of retail uses, up to 25,000 square feet of office development, up to 40 live/work residential units, and up to 40,000 square feet of community facilities.
- **River Park.** The River Park project is proposed to include approximately 2,286 residential units, 50,000 square feet of commercial space, and a 40 acre regional park site with community facilities.
- **Liberty.** Specific details regarding the Liberty project are still under development but this project would likely be similar to that of Yarbrough or River Park.
- **Stone Lock District.** The Stone Lock District project is proposed to include up to 2,500 residential units, up to 800 hotel rooms, up to 890,000 square feet of retail space, up to 1.7 million square feet of office space, and 60 acres of parks and open space.
- **Seaway International Trade Center.** Specific detail regarding the Seaway International Trade Center are still under development, but this project would likely propose large-scale industrial and commercial development.

6.2.3.4.6 City of West Sacramento Parks Master Plan

The Parks Master Plan, prepared in 2003, outlines the City's goals and policies with regard to the provision of parks and related recreational facilities for West Sacramento residents and provides an inventory of current facilities (SmithGroup 2003). As of April 2006, the City had approximately 145 acres of developed parkland (City of West Sacramento 2005a). Based on the estimated 2007 population of 44,928, this represented an 80-acre shortfall from the standard of 5 acres per 1,000

residents established in the general plan. Based on this ratio, it is estimated that by 2025 population growth in West Sacramento would require the City to have a total of 375 acres of parkland available in order to meet this standard. The Parks Master Plan targets several areas as particularly well-suited for park development, including several locations on the city's waterfront (SmithGroup 2003).

6.2.3.5 Projects Affecting Fish and Wildlife that Use the WSLIP Study Area

As described in Sections 3.8, 3.9, and 3.10, the primary long-term effects on vegetation, fish and wildlife are related to the removal of vegetation in compliance with the USACE levee vegetation policy. Regarding wildlife, this could contribute to a cumulative impact when combined with other projects that adversely affect habitat for wildlife that use the West Sacramento levee vegetation. Regarding fish, this could contribute to a cumulative impact when combined with other projects within the geographic range of the fish that would be affected. As such, this list includes projects that could also adversely affect the same species of fish or wildlife that would be affected by vegetation removal under the WSLIP.

6.2.3.5.1 CALFED Ecosystem Restoration Program

The goals of the CALFED Ecosystem Restoration Program are to:

- recover 19 at-risk native species and contribute to the recovery of 25 additional species;
- rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains and ecosystem water quality;
- maintain and enhance fish populations critical to commercial, sport and recreational fisheries;
- protect and restore functional habitats, including aquatic, upland and riparian, to allow species to thrive;
- reduce the negative effects of invasive species and prevent additional introductions that compete with and destroy native species; and
- improve and maintain water and sediment quality to better support ecosystem health and allow species to flourish.

The Ecosystem Restoration Program, which is divided into the Sacramento, San Joaquin, and Delta and Eastside Tributary regions, includes the following kinds of actions:

- develop and implement habitat management and restoration actions, including restoration of river corridors and floodplains, reconstruction of channel-floodplain interactions, and restoration of Delta aquatic habitats;
- restore habitat that would specifically benefit one or more at-risk species;
- implement fish passage programs and conduct passage studies;
- continue major fish screen projects and conduct studies to improve knowledge of their effects;
- restore geomorphic processes in stream and riparian corridors;
- implement actions to improve understanding of at-risk species;

- develop understanding and technologies to reduce the effects of irrigation drainage on the San Joaquin River and reduce transport of contaminant (selenium) loads carried by the San Joaquin to the Delta and the Bay; and
- implement actions to prevent, control, and reduce effects from non-native invasive species.

Ecosystem Restoration Program actions contribute to cumulative benefits on fish and wildlife species, habitats, and ecological processes.

6.2.3.5.2 Bay Delta Conservation Plan

The Bay Delta Conservation Plan provides for the recovery of endangered and sensitive species and their habitats in the Delta in a way that also provides for the protection and restoration of water supplies. The plan will identify and implement conservation strategies to improve the overall ecological health of the Delta; identify and implement more ecologically friendly ways to move fresh water through or around the Delta; address toxic pollutants, invasive species, and impairments to water quality; and provide a framework and funding to implement the plan over time.

Alternatives being evaluated include conveyance options using the through-Delta, peripheral aqueduct. The restoration options include various degrees of restoration in the Delta and Suisun Marsh. The final plan and the EIS/EIR are expected to be complete in 2010. The Bay Delta Conservation Plan could contribute to beneficial cumulative impacts by increasing suitable habitat for fish and wildlife species.

6.2.4 Cumulative Effects by Resource

The following section describes the potential contribution to cumulative effects on each resource.

6.2.4.1 Flood Control and Geomorphic Conditions

The proposed program could contribute to cumulative effects on flood control and geomorphic conditions resulting from a levee raise, levee setback, or seepage control treatment. As described in Section 3.2, Flood Control and Geomorphic Conditions, levee raises may cause slight increases in upstream water surface elevations and the proposed levee setback may cause slight increases in downstream elevations and flows. Additionally, seepage control treatments may transfer seepage risk to areas adjacent to the treatment.

Hydraulic modeling was used to determine some of the cumulative effects of levee raises, including flood walls and setbacks. Although a slight change in upstream and downstream conditions is expected to result from program alternatives, this change is less than significant.

Based on the quantitative results from the 2009 MBK Engineers modeling effort, upstream water levels would not be significantly affected by the proposed levee raises or other levee improvements either, assuming that all upstream levee strengthening components are eventually implemented.

Levee raises or setbacks and installation of stop logs or floodwalls could represent an unacceptable transfer of flood risk to adjacent or downstream levee districts. However, as described in MBK Engineers (2009), modeling effort for the WSLIP, raising and strengthening portions the Federal project levee system protecting West Sacramento and implementing in-channel erosion protection measures would not result in any significant hydraulic effects on other sub-basins protected as part of the Flood Control Project. Furthermore, these improvements would be consistent with the

principles that have guided the management of the Flood Control Project over the past century and with the policies adopted by the state legislature calling for an immediate and comprehensive effort to increase the level of flood protection provided to West Sacramento and the other urban areas within the Flood Control Project.

Restoration in the Yolo Bypass as proposed in the current Bay Delta Conservation Plan, Delta Vision, and other projects would further increase the flood capacity of the Sacramento River downstream of West Sacramento. It is also important to note that many of the areas adjacent to the West Sacramento levees (excluding the City of Sacramento), are rural and have been designed to flood as part of the overall Sacramento River flood control operation. As such, it is not expected that there would be a significant cumulative effect related to the WSLIP.

With respect to mean sea-level change and its effects on the program area, the WSLIP program area is relatively insensitive to the rates of sea-level rise. Of all the scenarios analyzed, only the high sea-level rise rate 100 years after the project is constructed shows greater than one-tenth of a foot stage increase in the Sacramento River, Yolo Bypass, or Sacramento Bypass in the WSLIP program area (MBK Engineers 2009b).

The Port of West Sacramento and the Deep Water Ship Channel see larger increases due to sea-level rise. The Deep Water Ship Channel is primarily backwater controlled and is hydraulically connected to the rest of the flood system fairly close to the sea (i.e., North Delta). The WSLIP design for the Deep Water Ship Channel indicates there is adequate freeboard available to accommodate a water surface increase of the magnitudes reported herein due to sea-level rise and still maintain the minimum project design freeboard of three feet (MBK Engineers 2009b).

6.2.4.2 Water Quality and Groundwater Resources

No groundwater resources would be affected by the WSLIP and, therefore, there would be no cumulative effects. The proposed treatments could affect water quality during construction by increasing turbidity, thus increasing the potential for and accidental release of hazardous materials. Cumulative effects could occur if other projects were constructed at the same time. Many of the West Sacramento development projects and other levee improvements by SAFCA could contribute to localized and temporary effects on water quality. As described in the water quality section, many minimization measures, including a SWPPP, would be implemented, turbidity would be monitored during construction to ensure it stays within the acceptable level identified by the RWQCB, and NPDES permit and WDRs would be obtained to limit discharge into the water table. These minimization measures are standard construction practices and it is assumed that other projects would also implement them. On completion of construction, no additional effects on water quality would occur as part of the WSLIP. As such, there would be no significant cumulative effect.

6.2.4.3 Geology, Seismicity, Soils, and Mineral Resources

The WSLIP could result in both beneficial and significant effects on geology, seismicity, and soils. There would be no effect on mineral resources, and therefore no cumulative effects associated with the WSLIP. Other earth-moving activities in the WSLIP area, such as development, could change the stability of soils, increase erosion and sedimentation, and expose structures to groundshaking and liquefaction. Soil stability is addressed through engineering design of structures, including levees, and ground-disturbing activities are required to stabilize soils upon completion of construction or even between stages of construction. As such, no significant cumulative effects related to soil

stability are anticipated. A cumulative increase in erosion and sedimentation could occur if other levee improvement projects on the Sacramento River are occurring at the same time. The potential for erosion and sedimentation resulting from the WSLIP and other projects is limited by minimization measures and implementation of a SWPPP. Any cumulative effect would be temporary and minimal, and therefore less than significant. The WSLIP replaces or upgrades existing flood control facilities (i.e., levees) and there would be no change in risks due to seismicity. However, there could be cumulative effects related to construction of structures that could be subject to seismic activity. The program area is not located within an active seismic area, and therefore any cumulative increase in risk related to groundshaking would be less than significant.

6.2.4.4 Transportation and Navigation

Construction activities associated with the WSLIP have the potential to result in short-term disruptions to roadways, including closures, increases in emergency response time and road hazards, effects on alternate transportation modes, disruption to navigation, temporary loss of service to railroads, and decreases in LOS for roads accessed or used for detours during construction. Combined with other projects in West Sacramento and along the Sacramento River, there could be significant cumulative effects on transportation if the WSLIP and other projects are implemented at the same time. Specifically, cumulative effects would occur if projects required closing or detours on multiple major roadways at the same time resulting in decreased access to areas within West Sacramento or a cumulative LOS lower than Level C or D, depending on the location of the road (See Section 3.5, Transportation and Navigation for a description of where these standards apply). With implementation of the environmental commitment to coordinate with the City to ensure minimal overlap in disturbances to traffic during WSLIP construction, these effects would be less than significant. In addition, the WSLIP may result in cumulative effects on railroad lines and services if the WSLIP and other projects that would require temporary closure of railroad tracks were implemented at the same time. WSAFCA will implement the environmental commitment to coordinate construction periods with railroad service officials to minimize potential effects, but dependent upon construction conditions, cumulative effects to railroad transportation could still be significant and unavoidable. Cumulative navigation effects could occur, but the WSLIP's contribution to these effects would be minimal because waterside work would be limited to the area adjacent to the levee. The river is wide enough to accommodate boat and other navigational traffic in the channel during construction and program activities would not result in navigability changes once construction is complete. Other projects that would affect navigability in the Sacramento River are also not likely to change access due to the river's width. No significant cumulative effects would occur.

6.2.4.5 Air Quality and Climate Change

The WSLIP would result in temporary construction-related emissions that would be mitigated by reducing vehicle and equipment emissions and implementing a fugitive dust plan. Other projects occurring in the YSAQMD at the same time as WSLIP construction would result in cumulative effects that would be significant, particularly ROG, NO_x, and PM10. It is expected that projects generating these pollutants would also minimize emissions through dust control and vehicle emissions control. However, there could still be a significant unavoidable cumulative effect.

Additionally, the project combined with other projects would result in a cumulative increase in greenhouse gas emissions. Even with emissions reduction mitigation that would be incorporated into the WSLIP and other projects, this cumulative effect is significant and unavoidable.

6.2.4.6 Noise

The WSLIP would result in substantial increases in noise levels and vibration at sensitive receptors during construction. Other projects in the vicinity of these receptors occurring at the same time as the WSLIP could result in cumulative effects. Because construction noise would be temporary and highly localized, the WSLIP is not anticipated to make a cumulatively considerable contribution to noise effects in the program area.

Similarly, permanent noise increases associated with WSLIP relief well pumps near sensitive receptors combined with other noise-increasing activities could result in a cumulative effect. Mitigation Measure NZ-MM-3 would help control pump noise. Because the pumps would be designed to minimize noise at these receptors, the WSLIP's contribution to this cumulative effect is not considerable, and this cumulative effect is not significant.

6.2.4.7 Vegetation and Wetlands

The WSLIP would result in direct loss of vegetation as a result of construction and implementation of the USACE policy of removing vegetation from the levee prism. Implementation of this policy along all of the Sacramento River levees would result in a significant cumulative effect, to which the WSLIP would make a considerable contribution. Some of the improvements proposed under the WSLIP and other projects would expand the floodplain within the levee and provide opportunities for habitat restoration. Although there could be limited opportunities to restore or preserve vegetation in areas that are not within the jurisdictional levee prism, the majority of the Sacramento River levees, especially in the West Sacramento area, do not have areas suitable for vegetation under the USACE policy. Restoration activities in the Delta and San Joaquin River could restore some of the vegetation lost as a result of projects along Sacramento River, but there would still be a substantial net loss. This would result in a significant cumulative effect that cannot be mitigated. This cumulative effect would be significant and unavoidable.

Similarly, the levee improvements could result in loss of wetlands. The WSLIP includes mitigation to ensure no net loss of wetlands and therefore there would be no considerable contribution to any cumulative effects on wetlands that may occur as a result of implementing other projects.

6.2.4.8 Fisheries and Aquatics

Most of the WSLIP treatments would result in construction-related degradation of fish habitat as a result of sedimentation and turbidity, accidental release of contaminants, noise, vibrations, or other disturbances. Combined with other projects occurring near the WSLIP, there could be significant cumulative effects. The WSLIP's contribution to these cumulative effects is not considerable because it would be temporary and minimized by implementation of a SWPPP and limiting construction activities to times when species are not present.

A few of the improvements would result in permanent loss or degradation of habitat, primarily through the removal of vegetation per the USACE policy or placement of riprap on the waterside of levees. Other levee projects along the Sacramento, Yuba and Feather Rivers would result in similar losses. Restoration activities in the Sacramento River, Delta, and San Joaquin River, including construction of levee setbacks, could offset loss of habitat for the fish that would be affected by the WSLIP. However, there would still be a substantial net loss of habitat, and this cumulative effect is significant and unavoidable.

6.2.4.9 Wildlife

The WSLIP would result in some direct take of species, which would be mitigated on or off site in coordination with the resource agencies. The primary cumulative effect on wildlife is related to removal of habitat. As described above under vegetation and wetlands and fisheries and aquatics, this effect would significant and unavoidable because it would occur along the entire Sacramento River levee system and there are limited opportunities to offset this loss. Additionally, many of the species that would be affected by the WSLIP and other similar projects rely on riparian or other habitat associated with the river system. The direct loss of species can be offset through coordination with resource agencies. Because these species are protected under applicable state and Federal laws, other projects would also minimize take and compensate for loss of species and their habitats. However, the WSLIP would result in a significant and unavoidable cumulative effect resulting from the removal of vegetation from the levees.

6.2.4.10 Land Use and Agriculture

Some of the WSLIP treatments could result in the conversion of some land use types to levee. Overall, the land use designation changes would be negligible as described in Section 3.11, Land Use and Agriculture. However, in areas adjacent to important farmland, a conversion of up to 111 acres could occur. This acreage accounts for approximately 0.0284% of the 390,250 acres of important farmland in Yolo County. Conversion of agricultural land in Yolo County is a primary concern related to land use and it is a significant cumulative impact. However, the WSLIP's contribution to this cumulative impact is not considerable.

6.2.4.11 Socioeconomics

Implementation of the WSLIP could result in temporary disruptions to agricultural and local business activities during construction, a permanent decrease in agricultural production related to the removal of farmland (as described above), and growth in West Sacramento as a result of improved levee stability. The permanent removal of farmland would be minimal compared to the total acres of farmland in the region as described above. Although this is a significant impact in Yolo County, the WSLIP's contribution would not be considerable. Similarly, the temporary disruption to agricultural and local business activities is not expected to contribute considerably to a cumulative impact.

6.2.4.12 Environmental Justice

The WSLIP would not result in environmental justice effects and, therefore, there would be no cumulative effect.

6.2.4.13 Visual Resources

The WSLIP would result in temporary changes in the visual quality of construction areas and access roads as a result of construction activities and equipment in areas that do not normally include construction-associated views. This effect would make a considerable contribution to a cumulative effect if other projects were occurring at the same time and affecting the same viewer groups along the Sacramento River corridor. This cumulative effect would be significant and unavoidable.

The primary long-term effect on visual resources is related to the USACE vegetation removal policy. The Sacramento River corridor includes extensive mature riparian and landscape vegetation. In

addition to construction-related vegetation removal, the recent USACE levee maintenance requirements prevent the replanting of any woody vegetation on these levees. This vegetation is characteristic of the Sacramento River region and is a highly desirable visual resource. Removal of this characteristic riparian vegetation and mature landscaping would greatly degrade the visual character and quality of the region. The removal of vegetation within the study area, in addition to the region-wide levee improvement projects, is considered a cumulatively significant and unavoidable effect on visual resources.

6.2.4.14 Recreation

The WSLIP would result in both beneficial and negative effects on recreation. Negative effects would occur as a result of vegetation removal and other construction activities that could disrupt recreation in the channels or along levees, bikepaths, or other trails. Other projects affecting the same channels, bikepaths, or trails could result in a cumulative effect on recreation. This cumulative effect would be less than significant because effects would be temporary and localized, and other facilities would be available for use during construction. The removal of vegetation, however, could result in a significant cumulative effect related to reduction of fish habitat and shade that enhances fishing recreation or other activities that rely on or are enhanced by vegetation on the levee. As this would occur throughout the Sacramento River levee system, this cumulative effect is significant and unavoidable.

Beneficial recreation effects include the addition of recreational facilities, including docks and fishing piers, formal park facilities, habitat zones, a continuous recreational trail, an amphitheater, an extension of the Riverwalk Promenade, and improvements to Bryte Park as part of the WSLIP. The City has also planned for the development of additional recreational facilities. This would be a beneficial cumulative effect on recreation in the West Sacramento area.

6.2.4.15 Utilities and Public Services

The WSLIP combined with other proposed projects could result in cumulative effects related to disruption to utility services, increased rates of landfill use, and expansion of drainage facilities. Cumulative effects related to utility service and landfill use would occur only during construction. Utility service disruptions would be avoided by implementation of Mitigation Measure PUB-MM-1: Verify Utility Locations, Coordinate with Utility Providers, Prepare a Response Plan, and Conduct Worker Training. These measures are standard and it is expected that other projects occurring at the same time as the WSLIP would minimize their potential for disruption similarly. Effects on landfill capacity are not expected to be considerable because much of the materials removed from existing levees would be reused, construction would be temporary, and the Central Landfill has plenty of capacity (see Section 3.16, Utilities and Public Services). Similarly, drainage facilities would not be expanded as relief wells would only produce up to 70 gallons per minute. As such, there would be no significant cumulative effect.

6.2.4.16 Public Health and Environmental Hazards

The WSLIP has the potential to slightly increase risks to the public during construction as a result of equipment and fuel usage. These risks would be minimized through implementation of the SWPPP and other environmental commitments. As these are standard practice for construction projects, it is expected that other projects would implement them and the overall cumulative effect would be less than significant.

The WSLIP would improve flood protection for West Sacramento. It includes all of the flood protection features protecting West Sacramento, but other projects that reduce stress on these levees could result in a beneficial cumulative effect by reducing the overall public risk resulting from levee failure.

6.2.4.17 Cultural Resources

No cumulative effects on cultural resources have been identified. Cultural resources are generally not considered subject to cumulative effects because they are either individually directly or indirectly affected in a way that changes the significance of the property or they are not affected in a way that changes the significance of the property.

It is possible that the project could cause a significant effect on historic properties and unidentified buried archaeological resources, including buried human remains, through possible ground disturbance associated with levee repair, construction, and maintenance activities.

The incorporation of mitigation, and compliance with the existing state and Federal laws and the policies set forth in the *City of West Sacramento General Plan*, the *Yolo County General Plan*, and the *Solano County General Plan* would reduce these effects. The cumulative effect on archaeological and architectural resources would be less than significant.

Chapter 7
Compliance with Applicable Laws, Policies, Plans, and Regulatory Framework

7.1 Introduction

This chapter provides preliminary information on the major requirements for permitting and environmental review and consultation for implementation of the project. Certain local, state, and Federal regulations require issuance of permits before project implementation; other regulations require agency consultation but may not require issuance of any authorization or entitlements before project implementation.

7.2 Regulatory Framework

7.2.1 Federal Requirements

7.2.1.1 National Environmental Policy Act

NEPA is the nation's broadest environmental law, applying to all Federal agencies and most of the activities they manage, regulate, or fund that have the potential to affect the environment. It requires Federal agencies to disclose and consider the environmental implications of their proposed actions. NEPA establishes environmental policies for the nation, provides an interdisciplinary framework for Federal agencies to prevent environmental damage, and contains action-forcing procedures to ensure that Federal agency decision makers take environmental factors into account.

NEPA requires the preparation of an appropriate document to ensure that Federal agencies accomplish the law's purposes. The President's CEQ has adopted regulations and other guidance that provide detailed procedures that Federal agencies must follow to implement NEPA.

This document is the instrument for NEPA compliance for the WSLIP and proposed EIPs under the USACE's authority, as described in Chapter 1.

7.2.1.2 Federal Endangered Species Act

Section 7 of the ESA requires Federal agencies, in consultation with USFWS and/or NMFS, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species. The required steps in the Section 7 consultation process are as follows.

- Agencies must request information from USFWS and/or NMFS on the existence in a project area of special-status species or species proposed for listing.
- Agencies must initiate formal consultation with USFWS and/or NMFS if the proposed action may adversely affect special-status species.

The WSLIP and proposed EIPs may affect special-status species. USACE and WSAFCA are in coordination with USFWS and NMFS and consultation will be initiated under Section 7 before publication of the Draft EIS/EIR.

7.2.1.3 Migratory Bird Treaty Act

The MBTA implements a series of international treaties that provide for migratory bird protection. The MBT A authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it is unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird..." (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBT A includes several hundred species and essentially includes all native birds. Permits for take of non-game migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

Compliance with the MBTA would be addressed through compliance with the ESA and CESA. The WSLIP incorporates mitigation measures that would help ensure that construction activities do not result in the take of migratory birds, as discussed in Section 3.10, Wildlife, and Chapters 4 and 5 for the proposed EIPs.

7.2.1.4 Bald Eagle Protection Act

The Bald Eagle Protection Act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds.

The WSLIP study area does not contain bald eagle or golden eagle nesting habitat, and the program would not result in the take of bald or golden eagles. The WSLIP incorporates mitigation measures that would ensure that construction activities do not result in the take of any raptors, as discussed in Section 3.10, Wildlife, and Chapters for and 5 for the proposed EIPs.

7.2.1.5 Clean Water Act Section 404, 404(b)(1) Guidelines, and Section 401

7.2.1.5.1 Section 404

Section 404 of the CWA requires that a permit be obtained from USACE for the discharge of dredged or fill material into "waters of the United States, including wetlands."

Waters of the United States include wetlands and lakes, rivers, streams, and their tributaries. *Wetlands* are defined for regulatory purposes, at 33 CFR § 328.3 as:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide; (2) All interstate waters, including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) All impoundments of waters otherwise defined as waters of the United States under the definition; (5) Tributaries of waters identified in paragraphs 1–4 in this section; (6) The territorial seas; and (7) Wetlands adjacent to waters identified in paragraphs 1–6 in this section.

CWA Section 404(b) requires that USACE process permits in compliance with guidelines developed by EPA. These guidelines (404[b][1] Guidelines) require that there be an analysis of alternatives available to meet the project purpose and need, including those that avoid and minimize discharges of dredged or fill materials in waters. Once this first test has been satisfied, the project that is permitted must be the least environmentally damaging practicable alternative before USACE may issue a permit for the proposed activity.

(Note: Section 404 does not apply to authorities under the Rivers and Harbors Appropriation Act of 1899, except that some of the same waters may be regulated under both statutes; the USACE typically combines the permit requirements of Section 10 and Section 404 into one permitting process.)

Coordination is in process with USACE regulatory staff regarding the presence of waters of the United States in the WSLIP study area and that of the proposed EIPs. A wetland delineation has been submitted for verification and jurisdictional determination. The draft delineation indicates that the proposed EIPs would not affect waters of the United States and a permit is not required. A permit will be applied for if the verification indicates otherwise or if the project changes to affect waters of the United States, and appropriate revisions under NEPA will be made in Final EIS.

7.2.1.5.2 Section 401

Under the CWA Section 401, applicants for a Federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a Federal component and may affect state water quality (including projects that require Federal agency approval [such as issuance of a Section 404 permit]) must also comply with CWA Section 401. In California, the authority to grant water quality certification has been delegated to the State Water Board, and applications for water quality certification under CWA Section 401 are typically processed by the RWQCB with local jurisdiction. Water quality certification requires evaluation of potential impacts in light of water quality standards and CWA Section 404 criteria governing discharge of dredged and fill materials into waters of the United States.

As Section 408 permission for the proposed EIPs constitutes a Federal action that may affect state water quality, a request for certification under CWA Section 401 will be submitted.

7.2.1.6 River and Harbors Appropriation Act of 1899

The River and Harbors Appropriation Act of 1899 addresses activities that involve the construction of dams, bridges, dikes, and other structures across any navigable water, or that place obstructions to navigation outside established Federal lines and excavate from or deposit material in such waters. Such activities require permits from USACE. *Navigable waters* are defined in Section 329.4 of the act as:

> Those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which impede or destroy navigable capacity.

7.2.1.6.1 Section 9

Section 9 (33 USC § 401) prohibits the construction of any bridge, dam, dike, or causeway across any navigable water of the United States in the absence of congressional consent and approval of the plans by the Chief of Engineers and the Secretary of the Army. Where the navigable portions of the water body lie wholly within the limits of a single state, the structure may be built under authority of the legislature of that state, if the location and plans or any modification thereof are approved by the Chief of Engineers and by the Secretary of the Army.

7.2.1.6.2 Section 10

Section 10 (33 USC § 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters, is unlawful unless the work has been authorized by the Chief of Engineers.

7.2.1.6.3 Section 13

Section 13 (33 USC § 407) provides that the Secretary of the Army, whenever the Chief of Engineers determines that anchorage and navigation would not be injured thereby, may permit the discharge of refuse into navigable waters. In the absence of a permit, such discharge of refuse is prohibited. While the prohibition of this section, known as the Refuse Act, is still in effect, the permit authority of the Secretary of the Army has been superseded by the permit authority provided the Administrator, EPA, and the states under Sections 402 and 405 of the CWA, respectively.

As described above (7.2.1.5.1), pending verification, the proposed EIPs would not affect waters of the United States under Section 404 or navigable waters under the Rivers and Harbors Appropriation Act of 1899.

7.2.1.6.4 Section 14

Section 14 (33 USC § 408) requires approval from the Chief of Engineers, or designee, for alterations to certain public works, including Federal project levees, so long as the alteration would not be injurious to the public interest and does not impair the usefulness of the work, such as the levee section proposed for modification by the EIP. Section 408 alterations would include actions that change the hydraulic capacity of the floodway or change the authorized geometry of the Federal project. As described in Chapter 1, WSAFCA is seeking approval under 33 USC § 408, supported by this document.

7.2.1.6.5 Section 208 (33 CFR 208.10)

Section (33 CFR 208.10) authorizes the USACE District Engineer to approve relatively minor, low impact alterations/modifications related to the O&M responsibilities of the non-Federal sponsors, provided these alterations and modifications do not adversely affect the functioning of the project and flood fighting activities. The CHP Academy and The Rivers EIPs are considered to fall under Section 408, as described in the preceding paragraph, the process for which includes and goes beyond the Section 208 District Engineer level to the Chief of Engineers.

7.2.1.7 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all Federal agencies consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The legislation states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase *adversely affect* refers to the creation of any effect that reduces the quality or quantity of essential fish habitat. Federal activities that occur outside of an essential fish habitat but that may, nonetheless, have an impact on essential fish habitat waters and substrate must also be considered in the consultation process.

Under the Magnuson-Stevens Act, effects on habitat managed under the Pacific Salmon Fishery Management Plan must also be considered. The Magnuson-Stevens Act states that consultation regarding essential fish habitat should be consolidated, where appropriate, with the interagency consultation, coordination, and environmental review procedures required by other Federal statutes, such as NEPA, Fish and Wildlife Coordination Act, CWA, and ESA. EFH consultation requirements can be satisfied through concurrent environmental compliance if the lead agency provides NMFS with timely notification of actions that may adversely affect EFH and if the notification meets requirements for essential fish habitat assessments.

As described above under ESA compliance, USACE and WSAFCA are in coordination with USFWS and NMFS and consultation will be initiated under Section 7 before publication of the Draft EIS/EIR and that process will include consideration of and compliance with the Magnuson-Stevens Act to determine effects on EFH. At this time, it is considered that no EFH would be affected.

7.2.1.8 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act in general requires Federal agencies to coordinate with USFWS and state fish and game agencies whenever streams or bodies of water are controlled or modified. This coordination is intended both to promote the conservation of wildlife resources by providing equal consideration for fish and wildlife in water project planning and to provide for the development and improvement of wildlife resources in connection with water projects. Federal agencies undertaking water projects are required to include recommendations made by USFWS and state fish and game agencies in project reports, and give full consideration to these recommendations.

Coordination under the Fish and Wildlife Coordination Act has been funded and will be initiated by USACE for a Coordination Act Report to be prepared. California DFG will be consulted.

7.2.1.9 Farmland Protection Policy Act and Memoranda on Farmland Preservation

Two policies require Federal agencies to include assessments of the potential effects of a proposed project on prime and unique farmland. These policies are the FPPA and the Memoranda on Farmland Preservation, dated August 30, 1976, and August 11, 1980, respectively, from the CEQ. Under requirements set forth in these policies, Federal agencies must determine these effects before taking any action that could result in converting designated prime or unique farmland for non-agricultural purposes. If implementing a project would adversely affect farmland preservation, the

agencies must consider alternative actions to lessen those effects. Federal agencies also must ensure that their programs, to the extent feasible, are compatible with state, local, and private programs to protect farmland. NRCS is the Federal agency responsible for ensuring that these laws and policies are followed.

The WSLIP would potentially result in loss of farmland, depending on the treatment selected. Section 3.11, Land Use and Agriculture, addresses this and proposes mitigation for the potential loss of agricultural land. The CHP Academy and The Rivers EIPs would have no effect on farmland.

7.2.1.10 National Historic Preservation Act

Section 106 of the NHPA requires Federal agencies to evaluate the effects of their undertakings on historic properties, which are those properties listed or eligible for listing on the NRHP. Implementing regulations at 36 CFR Part 800 require that Federal agencies, in consultation with SHPO, identify historic properties within the APE of the proposed project and make an assessment of adverse effects if any are identified. If the project is determined to have an adverse effect on historic properties, the Federal agency is required to consult further with SHPO and the Advisory Council on Historic Preservation to develop methods to resolve the adverse effects. The Section 106 process has five basic steps.

1. Initiate the Section 106 process, including the identification of consulting parties, such as Native American tribes.
2. Identify and evaluate cultural resources to determine whether they are historic properties.
3. Assess the effects of the undertaking on historic properties within the APE.
4. If historic properties may be subject to an adverse effect, the Federal agency, the SHPO, and any other consulting parties (including Native American tribes and the ACHP) continue consultation to seek ways to avoid, minimize, or mitigate the adverse effect. An MOA is usually developed to document the measures agreed upon to resolve adverse effects. Alternatively, the Federal agency may prepare and execute a PA with the aforementioned parties to comply with 36 CFR 800, particularly in the context of complex undertakings that entail years of implementation actions or where the undertaking's effects on historic properties cannot be well characterized during the planning phase.
5. Proceed in accordance with the terms of the MOA or PA.

The efforts taken to identify cultural resources within the APE and any potential effects are discussed in Section 3.18, Cultural Resources. Consultation with SHPO will be initiated by the time of publication of the Draft EIS/EIR.

7.2.1.11 American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 is also applicable to Federal undertakings. This act established "the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites" (Public Law 95-431).

It is not anticipated that actions related to the program will conflict with the American Indian Religious Freedom Act. Consultation with the Native American Heritage Commission and the Sacred

Lands database was negative for findings in the WSLIP area, which is discussed in Section 3.18, Cultural Resources.

7.2.1.12 Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (16 USC 1271 et seq.) establishes a National Wild and Scenic Rivers System for the protection of rivers with important scenic, recreational, fish and wildlife, and other values. Rivers are classified as wild, scenic, or recreational. The act designates specific rivers for inclusion in the System and prescribes the methods and standards by which additional rivers may be added. The lower American River is included in the system and is designated as Recreational.

None of the internal water features of the program are tributary to the lower American River or any other river included in the system. Therefore, the WSLIP actions would have no effect on Wild or Scenic Rivers.

7.2.1.13 Executive Order 11988 (Floodplain Management)

Executive Order 11988 (May 24, 1977) requires Federal agencies to prepare floodplain assessments for proposed actions located in or affecting floodplains. If an agency proposes to conduct an action in a floodplain, it must to the degree possible avoid short and long term adverse effects associated with the occupancy and the modification of a floodplain and to avoid direct and indirect support of floodplain development whenever there is a reasonable and feasible alternative. If the only reasonable and feasible alternative involves siting in a floodplain, the agency must minimize potential harm to or in the floodplain and explain why the action is proposed in the floodplain.

The WSLIP proposes to improve existing flood protection facilities and does not directly or indirectly propose floodplain development. Please see further discussion in Chapter 6, Growth-Inducing and Cumulative Effects.

7.2.1.14 Executive Order 11990 (Protection of Wetlands)

Executive Order 11990 (May 24, 1977) requires Federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands. Section 3.8, Vegetation and Wetlands, describes effects on wetlands and mitigation measures for reducing significant effects for the WSLIP. Chapters 4 and 5 provide information specific to the proposed EIPs.

7.2.1.15 Executive Order 12898 (Environmental Justice)

Executive Order 12898 (February 11, 1994) requires Federal agencies to identify and address adverse human health or environmental effects of Federal programs, policies, and activities that could be disproportionately high on minority and low-income populations. Federal agencies must ensure that Federal programs or activities do not directly or indirectly result in discrimination on the basis of race, color, or national origin. Federal agencies must provide opportunities for input into the NEPA process by affected communities and must evaluate the potentially significant and adverse environmental effects of proposed actions on minority and low-income communities during environmental document preparation. Even if a proposed Federal project would not result in significant adverse impacts on minority and low-income populations, the environmental document must describe how Executive Order 12898 was addressed during the NEPA process.

Environmental justice issues are discussed in Section 3.13, Environmental Justice. In summary, the WSLIP and proposed EIPs would not result in any significant effects on minority or low-income populations. In reality, the WSLIP and proposed EIPs would increase flood protection to nearby established diverse communities of mixed income and ethnicity.

7.2.1.16 Executive Order 13007 (Indian Sacred Sites) and April 29, 1994, Executive Memorandum

Executive Order 13007 (May 24, 1996) requires Federal agencies with land management responsibilities to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies are to maintain the confidentiality of sacred sites. Among other things, Federal agencies must provide reasonable notice of proposed actions or land management policies that may restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites. The agencies must comply with the April 29, 1994, Executive Memorandum, *Government-to-Government Relations with Native American Tribal Governments*.

Based on the analysis (summarized in Section 3.18, Cultural Resources), no sacred sites would be significantly affected by the implementation of the WSLIP or proposed EIPs.

7.2.1.17 Federal Clean Air Act

The Federal CAA was enacted to protect and enhance the nation's air quality in order to promote public health and welfare and the productive capacity of the nation's population. The CAA requires an evaluation of any Federal action to determine its potential impact on air quality in the project region. California has a corresponding law, which also must be considered during the EIR process.

For specific projects, Federal agencies must coordinate with the appropriate air quality management district as well as with EPA. This coordination would determine whether the project conforms to the CAA and the State Implementation Plan (SIP).

Section 176 of the CAA prohibits Federal agencies from engaging in or supporting in any way an action or activity that does not conform to an applicable SIP. Actions and activities must conform to a SIP's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and in attaining those standards expeditiously. EPA promulgated conformity regulations (codified in 40 CFR § 93.150 *et seq.*).

The potential air quality impacts of the WSLIP resulting from construction (such as equipment emissions and fugitive dust) are discussed in Section 3.6, Air Quality and Climate Change, which analyzes and documents compliance with the CAA. Chapters 4 and 5 provide specific information for the proposed EIPs.

7.2.1.18 Federal Water Project Recreation Act

The Federal Water Project Recreation Act requires Federal agencies with authority to approve water projects to include recreation development as a condition of approving permits. Recreation development must be considered along with any navigation, flood control, reclamation, hydroelectric, or multi-purpose water resource project. The act states that,

> consideration should be given to opportunities for outdoor recreation and fish and wildlife enhancement whenever any such project can reasonably serve either or both purposes consistently.

Recreation effects, such as temporary loss to river access, are described in Section 3.15, Recreation.

7.2.1.19 Resource Conservation and Recovery Act

The Federal Resource Conservation and Recovery Act enables EPA to administer a regulatory program that extends from the manufacture of hazardous materials to their disposal, thus regulating the generation, transportation, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

No materials classified as hazardous are proposed to be used for the WSLIP or proposed EIPs.

7.2.1.20 Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA (also known as Superfund) was passed to facilitate the cleanup of the nation's toxic waste sites. In 1986, the act was amended by the Superfund Amendment and Reauthorization Act Title III (community right-to-know laws). Title III states that past and present owners of land contaminated with hazardous substances can be held liable for the entire cost of the cleanup, even if the material was dumped illegally when the property was under different ownership.

No hazardous waste sites were identified in the WSLIP study area during reconnaissance surveys and record searches (Appendix H).

7.2.1.21 Wildlife Hazards on or Near Airports

The Federal Aviation Administration addresses control of hazardous wildlife in Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or near Airports*. The Federal Aviation Administration provides direction on where public-use airports should restrict land uses that have the potential to attract hazardous wildlife. The Federal Aviation Administration recommends a distance of 10,000 feet separating wildlife attractants and aircraft movement areas. The area within a 10,000-foot radius of the Airport Operations Area is designated as the Critical Zone. The definition of wildlife attractants in Advisory Circular 150/5200-33A includes human-made or natural areas, such as poorly drained areas, retention ponds, agricultural activities, and wetlands. Advisory Circular 150/5200-33A recommends against the use of airport property for agricultural production within a 5-mile radius of the Airport Operations Area unless the income from the agricultural crops is necessary for the economic viability of the airport.

The Federal Aviation Administration has a regulatory interest in managing wildlife attractants within 5 miles of the edge of the Sacramento County Airport's Area of Operations. If potential borrow sites are identified within the 10,000-foot Airport Critical Zone, management of the grasslands created by borrow operations would be consistent with the Airport's *Wildlife Hazard Management Plan* (Sacramento County Airport System 2007).

7.2.1.22 Sustainable Fisheries Act

In response to growing concern about the status of United States fisheries, Congress passed the Sustainable Fisheries Act of 1996 (PL 104-297) to amend the Magnuson-Stevens Fishery Conservation and Management Act (PL 94-265), the primary law governing marine fisheries management in the Federal waters of the United States. Under the Sustainable Fisheries Act, consultation is required by NMFS on any activity that might adversely affect EFH. EFH includes

those habitats that fish rely on throughout their life cycles. It encompasses habitats necessary to allow sufficient production of commercially valuable aquatic species to support a long-term sustainable fishery and contribute to a healthy ecosystem. The Sacramento River has been designated as EFH by the Pacific Fishery Management Council. As described above under ESA compliance, USACE and WSAFCA are in coordination with USFWS and NMFS and consultation will be initiated under Section 7 before publication of the Draft EIS/EIR and that process will include consideration of and compliance with the Magnuson-Stevens Act to determine effects on EFH. At this time, it is considered that no EFH would be affected.

7.2.1.23 Uniform Relocation Assistance and Real Property Acquisition Policies Act

All or portions of parcels within the EIP footprint would need to be acquired to construct either of the action alternatives. Federal, state, local government agencies, and others receiving Federal financial assistance for public programs and projects that require the acquisition of real property must comply with the policies and provisions set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987 (42 USC 4601 *et seq*.) (Uniform Act), and implementing regulation, Title 49 CFR Part 24. Relocation advisory services, moving costs reimbursement, replacement housing, and reimbursement for related expenses and rights of appeal are provided for in the Uniform Act.

Program implementation would require acquisition of property to construct levee improvements, and may require displacement of residents.

Property acquisition and relocation services, compensation for living expenses for temporarily relocated residents, and negotiations regarding any compensation for temporary loss of business would be accomplished in accordance with the Uniform Act and California Government Code Section 7267 *et seq*.

7.2.2 State Requirements

7.2.2.1 California Environmental Quality Act

CEQA requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. The environmental review required imposes both procedural and substantive requirements. At a minimum, an initial review of the project and its environmental effects must be conducted. CEQA's primary objectives are to:

- disclose to decision makers and the public the significant environmental effects of proposed activities,
- identify ways to avoid or reduce environmental damage,
- prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures,
- disclose to the public reasons for agency approval of projects with significant environmental effects,
- foster interagency coordination in the review of projects, and
- enhance public participation in the planning process.

CEQA applies to all discretionary activities proposed to be carried out or approved by California public agencies, including state, regional, county, and local agencies, unless an exemption applies. The act requires that public agencies comply with both procedural and substantive requirements. Procedural requirements include the preparation of the appropriate public notices (including notices of preparation), scoping documents, alternatives, environmental documents (including mitigation measures, mitigation monitoring plans, responses to comments, findings, and statements of overriding considerations), completion of agency consultation and State Clearinghouse review, and provisions for legal enforcement and citizen access to the courts.

CEQA's substantive provisions require agencies to address environmental impacts disclosed in an appropriate document. When avoiding or minimizing environmental damage is not feasible, CEQA requires agencies to prepare a written statement of overriding considerations when they decide to approve a project that will cause one or more significant effects on the environment that cannot be mitigated. CEQA establishes a series of action-forcing procedures to ensure that agencies accomplish the purposes of the law. In addition, under the direction of CEQA, the California Resources Agency has adopted regulations, known as the State CEQA Guidelines, which provide detailed procedures that agencies must follow to implement the law.

This document is the instrument for CEQA compliance for the WSLIP and proposed EIPs under the USACE's authority, as described in Chapter 1.

7.2.2.2 California Endangered Species Act

CESA is similar to ESA but pertains only to state-listed endangered and threatened species. CESA requires state agencies to consult with DFG when preparing documents under CEQA to ensure that the actions of the state lead agency do not jeopardize the continued existence of listed species. CESA directs agencies to consult with DFG on projects or actions that could affect listed species, directs DFG to determine whether there would be jeopardy to listed species, and allows DFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if the agency determines that there are "overriding considerations;" however, the agencies are prohibited from approving projects that would cause the extinction of a listed species.

Mitigating impacts on state-listed species involves avoidance, minimization, and compensation (listed in order of preference). Unavoidable impacts on state-listed species are typically addressed in a detailed mitigation plan prepared in accordance with DFG guidelines. DFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements.

CESA prohibits the "take" of plant and wildlife species state-listed as endangered or threatened. DFG may authorize take if there is an approved habitat management plan or management agreement that avoids or compensates for impacts on listed species.

Take of state-listed species or substantial degradation of habitat is not presently anticipated during construction or operation of the WSLIP or proposed EIPs, so specific take authorization is not triggered. Effects on wildlife resources are discussed in Section 3.10, Wildlife, and Chapters 4 and 5.

7.2.2.3 Natural Community Conservation Planning Act

The NCCPA (California Fish and Game Code Section 2800 *et seq.*) was enacted to support broad-based planning for effective protection and conservation of the state's wildlife heritage, while continuing to allow appropriate development and growth. The purpose of natural community conservation planning is to sustain and restore those species and their habitat identified by DFG that are necessary to maintain the continued viability of biological communities affected by human changes to the landscape. A Natural Community Conservation Plan identifies and provides for those measures necessary to conserve and manage natural biological diversity within the plan area while allowing compatible use of the land. DFG may authorize the take of any identified species, including listed and non-special-status species, pursuant to Section 2835 of the NCCPA, if the conservation and management of such species is provided for in a Natural Community Conservation Plan approved by DFG.

The program would not affect the take of state-listed species or substantially degrade habitat, so a Natural Community Conservation Plan is not triggered. Effects on biological resources are discussed in Section 3.8, Vegetation and Wetlands; Section 3.10, Wildlife; and Chapters 4 and 5.

7.2.2.4 Section 1602 of the California Fish and Game Code

DFG regulates work that will substantially affect resources associated with rivers, streams, and lakes in California, pursuant to Fish and Game Code Sections 1600 to 1607. Any action from a public project that substantially diverts or obstructs the natural flow or changes the bed, channel, or bank of any river, stream, or lake, or uses material from a streambed must be previously authorized by DFG in a lake or streambed alteration agreement under Section 1602 of the Fish and Game Code. This requirement may in some cases apply to any work undertaken within the 100-year floodplain of a body of water or its tributaries, including intermittent streams and desert washes. As a general rule, however, it applies to any work done within the annual high-water mark of a wash, stream, or lake that contains or once contained fish and wildlife, or that supports or once supported riparian vegetation.

Applications for Streambed Alteration Agreements will be submitted to DFG to authorize the proposed EIPs under Section 1602.

7.2.2.5 Porter-Cologne Water Quality Control Act of 1969

In 1967, the Porter-Cologne Act established the State Water Board and nine RWQCBs as the primary state agencies with regulatory authority over California water quality and appropriative surface water rights allocations. Under this act (and the CWA), the state is required to adopt a water quality control policy and WDRs to be implemented by the State Water Board and nine RWQCBs. The State Water Board also establishes Basin Plans and statewide plans. The RWQCBs carry out State Water Board policies and procedures throughout the state.

Basin Plans designate beneficial uses for specific surface water and groundwater resources and establish water quality objectives to protect those uses. The project has the potential to affect water quality in surface water or groundwater within the project area which is governed by the Central Valley RWQCB.

Section 3.3, Water Quality and Groundwater Resources, describes program water quality effects and mitigation measures and Chapters 4 and 5 address those specific to the proposed EIPs.

7.2.2.6 Central Valley Flood Protection Board Encroachment Permit

The CVFPB (formerly The Reclamation Board) requires an encroachment permit for any non-Federal activity along or near Federal flood damage reduction project levees and floodways or in CVFPB-designated floodways to ensure that proposed local actions or projects do not impair the integrity of existing flood damage reduction systems to withstand flood conditions. The permits are conditioned upon WSAFCA's receipt of permission from USACE for alteration of the Federal project works pursuant to Section 408.

7.2.2.7 California Surface Mining and Reclamation Act

The California Surface Mining and Reclamation Act of 1975 (PRC Section 2710 *et seq*.) (SMARA) addresses surface mining. Activities subject to SMARA include, but are not limited to, mining of minerals, gravel, and borrow material. The SMARA statute requires mitigation to reduce adverse impacts on public health, property, and the environment. Because SAFCA would require borrow material for project construction, SAFCA must comply with SMARA. SMARA applies to an individual or entity that would disturb more than 1 acre or remove more than 1,000 cubic yards of material through surface mining activities, including the excavation of borrow pits for soil material. SMARA is implemented through ordinances for permitting developed by local government "lead agencies" that provide the regulatory framework under which local mining and reclamation activities are conducted. The State Mining and Geology Board reviews the local ordinances to ensure that they meet the procedures established by SMARA.

The CHP Academy and The Rivers EIPs would use borrow from permitted sources; therefore, a SMARA permit would not be required. Other program activities may be subject to independent environmental review and SMARA compliance.

7.2.2.8 California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The California Department of Conservation, Office of Land Conservation, maintains a statewide inventory of farmlands. These lands are mapped by the Division of Land Resource Protection as part of the Farmland Mapping and Monitoring Program. The maps are updated every 2 years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. Farmlands are divided into the following five categories based on their suitability for agriculture.

- Prime Farmland: land that has the best combination of physical and chemical characteristics for crop production. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed.
- Farmland of Statewide Importance: land other than Prime Farmland that has a good combination of physical and chemical characteristics for crop production.
- Unique Farmland: land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, but that has been used for the production of specific crops with high economic value.
- Farmland of Local Importance: land that is either currently producing crops or has the capability of production, but that does not meet the criteria of the categories above.
- Grazing Land: land on which the vegetation is suited to the grazing of livestock.

These categories are sometimes referred to as Important Farmland. Other categories used in the mapping system are urban and built-up lands, lands committed to non-agricultural use, and other lands (land that does not meet the criteria of any of the other categories).

Prime Farmland and Farmland of Statewide Importance that occurs in the city of West Sacramento is concentrated in areas adjacent to the Sacramento River south levee and the South Cross levee (California Department of Conservation 2008). Farmland is discussed further in Section 3.11, Land Use and Agriculture. No farmland would be affected by the CHP Academy or The Rivers EIPs.

7.2.2.9 California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, commonly known as the Williamson Act (California Government Code Section 51200 *et seq*.), enables local governments to enter into contracts with private landowners for the purpose of promoting the continued use of the relevant land in agricultural or related open space use. In return, landowners receive property tax assessments that are based on farming and open space uses instead of full market value. Local governments receive an annual subvention (subsidy) of forgone property tax revenues from the state via the Open Space Subvention Act of 1971.

The Williamson Act empowers local governments to establish agricultural preserves consisting of lands devoted to agricultural uses and other compatible uses. Upon establishment of such preserves, the locality may offer to owners of included agricultural land the opportunity to enter into annually renewable contracts that restrict the land to agricultural use for at least 10 years (i.e., the contract continues to run for 10 years following the first date upon which the contract is not renewed). In return, the landowner is guaranteed a relatively stable tax rate, based on the value of the land for agricultural/open space use only and unaffected by its development potential.

As a public agency that may acquire lands within agricultural preserves, including lands under contract, SAFCA is exempt from the normal cancellation process for Williamson Act contracts, because the contract is nullified for the portion of the land actually acquired (California Government Code Section 51295). SAFCA must provide notice to the California Department of Conservation prior to acquiring such lands (California Government Code Section 51291[b]). A second notice is required within 10 working days after the land is actually acquired (California Government Code Section 51291 (c J). As the land would be acquired for flood damage reduction measures, SAFCA is exempt from the findings required in California Government Code Section 51292 (California Government Code Section 51293[e][1]) because the proposed project consists of flood control works. The preliminary notice to the California Department of Conservation, provided before lands are actually acquired, would demonstrate the purpose of the project and the exemption from the findings.

There are no Williamson Act contracts within the city limits.

7.2.2.10 California Fish and Game Code Section 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby

project construction. This statute does not provide for the issuance of any type of incidental take permit.

7.2.2.11 California Fish and Game Code—Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species. DFG has informed non-Federal agencies and private parties that their actions must avoid take of any fully protected species.

7.2.2.12 Basin Plan

Pursuant to the Porter-Cologne Act, the Central Valley RWQCB prepares and updates the Basin Plan for the Sacramento and San Joaquin River Basins every 3 years; the most recent update was completed in February 2007 (Central Valley Regional Water Quality Control Board 2007). The Basin Plan describes the officially designated beneficial uses for specific surface water and groundwater resources and the enforceable water quality objectives necessary to protect those beneficial uses. The Natomas Basin is located within the Central Valley RWQCB jurisdiction and is subject to the Basin Plan.

The Basin Plan includes numerical and narrative water quality objectives for physical and chemical water quality constituents. Numerical objectives are set for temperature, DO, turbidity, and pH; TDS, electrical conductivity, bacterial content, and various specific ions; trace metals; and synthetic organic compounds. Narrative objectives are set for parameters such as suspended solids, biostimulatory substances (e.g., nitrogen and phosphorus), oil and grease, color, taste, odor, and aquatic toxicity. Narrative objectives are often precursors to numeric objectives. The primary method used by the Central Valley RWQCB to ensure conformance with the Basin Plan's water quality objectives and implementation policies and procedures is to issue WDRs for projects that may discharge wastes to land or water. WDRs specify terms and conditions that must be followed during the implementation and operation of a project.

7.2.2.13 California Toxics Rule and State Implementation Policy

The CTR was promulgated in 2000 in response to requirements of the EPA NTR. The NTR and CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are subject to regulation pursuant to Section 303(c) of the CWA. The NTR and CTR include criteria for the protection of aquatic life and human health. Human health criteria (water and organisms) apply to all waters with a Municipal and Domestic Supply beneficial use designation as indicated in the RWQCBs' basin plans. The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Plan, was adopted by the State Water Board in 2000 to establish provisions for translating CTR criteria, NTR criteria, and basin plan water quality objectives for toxic pollutants into the following:

- NPDES permit effluent limits,
- compliance determinations,
- monitoring for dioxin (2,3,7,8-TCDD) equivalents,

- chronic toxicity control provisions,
- initiating site-specific objective development, and
- granting exceptions.

See Section 3.3, Water Quality and Groundwater Resources, for program-related information and Chapters 4 and 5 for EIP information.

7.2.2.14 California Register of Historic Resources

The CRHR includes resources that are listed in or formally determined eligible for listing in the NRHP (see Section 3.18, Cultural Resources) as well as some California State Landmarks and Points of Historical Interest (PRC Section 5024.1, 14, CCR Section 4850). Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (State CEQA Guidelines Section 15064.5[a][2]). The eligibility criteria for listing in the CRHR are similar to those for NRHP listing but focus on the importance of the resources to California history and heritage. A cultural resource may be eligible for listing in the CRHR if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. is associated with the lives of person important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

7.2.2.15 Native American Heritage Commission

NAHC identifies and catalogs places of special religious or social significance to Native Americans and known graves and cemeteries of Native Americans on private lands, and performs other duties regarding the preservation and accessibility of sacred sites and burials and the disposition of Native American human remains and burial items. Consultation with NAHC and the Sacred Lands database was negative for findings in the WSLIP area, which is discussed in Section 3.18, Cultural Resources.

7.2.2.16 California Climate Solutions Act

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves the reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Contributions of GHG emissions related to the program are discussed in Section 3.6, Air Quality and Climate Change. Chapters 4 and 5 provide EIP-specific information.

7.2.2.17 State of California General Plan Guidelines

The OPR published the *State of California General Plan Guidelines* (Governor's Office of Planning and Research 2003), which provides guidance for the acceptability of projects within specific L_{dn} contours. Generally, residential uses (e.g., mobile homes) are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA L_{dn}. Residential uses are normally unacceptable in areas exceeding 70 dBA L_{dn} and conditionally acceptable within 55–70 dBA L_{dn}.

Schools are normally acceptable in areas up to 70 dBA Ldn and normally unacceptable in areas exceeding 70 dBA L_{dn}. Commercial uses are normally acceptable in areas with a CNEL of up to 70 dBA. Commercial uses are conditionally acceptable where the Ldn is between 67.5 and 77.5 dBA, depending on the noise insulation features and the noise reduction requirements. The guidelines also provide adjustment factors for determining noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Noise studies and program-related impacts and mitigation are discussed in Section 3.7, Noise. Chapters 4 and 5 provide EIP-specific information.

7.2.2.18 California Code of Regulations, Title 24

Title 24 of CCR establishes standards governing interior noise levels that apply to all new multi-family residential units in California. These standards require that acoustical studies be performed before construction begins at locations where the existing L_{dn} exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that limit maximum L_{dn} levels to 45 dBA in any habitable room. Although no generally applicable interior noise standards are pertinent to all uses, many communities in California have adopted an L_{dn} of 45 dBA as an upper limit on interior noise in all residential units.

Noise studies and program-related impacts and mitigation are discussed in Section 3.7, Noise. Chapters 4 and 5 provide EIP-specific information.

7.2.2.19 Central Valley Flood Control Act of 2008

The Central Valley Flood Control Act of 2008, passed in 2007, recognizes that the Central Valley of California, which includes the City of West Sacramento, is experiencing unprecedented development, resulting in the conversion of historically agricultural lands and communities to densely populated residential and urban centers. Because of the potentially catastrophic consequences of flooding, the Act recognizes that the Federal government's current 100-year flood protection standard is not sufficient to protect urban and urbanizing areas within flood-prone areas throughout the Central

Valley and declares that the minimum standard for these areas is a 200-year level of flood protection. To continue with urban development, cities and counties must develop and implement plans for achieving this new standard by 2025. With respect to flood risk reduction, the Central Valley Flood Control Act also calls upon DWR to develop a comprehensive CVPP by the end of 2012 for protecting the lands currently within the Sacramento–San Joaquin River Flood Management System.

7.2.2.20 California Regulations for Environmental Justice

Most state governments have plans and policies intended to protect and expand the local and regional economies affecting the communities within their jurisdictions. State plans and policies also frequently address other social and economic impact topics, including fiscal conditions and related public services that affect local residents' quality of life.

Within California, SB 115 (Chapter 690, Statutes of 1999) was signed into law in 1999. The legislation established OPR as the coordinating agency for state environmental justice programs (California Government Code, Section 65040.12[a]) and defined environmental justice in statute as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Government Code Section 65040.12(e). SB 115 further required the CalEPA to develop a model environmental justice mission statement for boards, departments, and offices within the agency by January 1, 2001 (Public Resources Code, Sections 72000–72001).

In 2000, SB 89 (Chapter 728, Statutes of 2000) was signed, which complemented SB 115 by requiring the creation of an environmental justice working group and an advisory group to assist CalEPA in developing an intra-agency environmental justice strategy (PRC Sections 72002–72003). SB 828 (Chapter 765, Statutes of 2001) added and modified due dates for the development of CalEPA's intra-agency environmental justice strategy and required each board, department, and office within CalEPA to identify and address, no later than January 1,2004, any gaps in its existing programs, policies, and activities that may impede environmental justice (PRC, Sections 71114–71115).

Cal/EP A adopted its environmental justice policy in 2004 (California PRC, Sections 71110–71113). This policy (or strategy) provides guidance to its resource boards, departments, and offices. It is intended to help achieve the state's goal of "achieving fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws and policies."

AB 1553 (Chapter 762, Statutes of 2001) required OPR to incorporate environmental justice considerations in the General Plan Guidelines. AB 1553 specified that the guidelines should propose methods for local governments to address the following:

- planning for the equitable distribution of new public facilities and services that increase and enhance community quality of life,
- providing for the location of industrial facilities and uses that pose a significant hazard to human health and safety in a manner that seeks to avoid over-concentrating these uses in proximity to schools or residential dwellings,

- providing for the location of new schools and residential dwellings in a manner that avoids proximity to industrial facilities and uses that pose a significant hazard to human health and safety, and
- promoting more livable communities by expanding opportunities for transit-oriented development.

Although environmental justice is not a mandatory topic in the general plan, OPR is required to provide guidance to cities and counties for integrating environmental justice into their general plans. The 2003 edition of the *General Plan Guidelines* included the contents required by AB 1553 (see pages 8, 12, 20–27, 40, 114, 142, 144, and 260 of the revised *General Plan Guidelines*).

Environmental justice issues pertaining to the WSLIP are discussed in Section 3.13, Environmental Justice.

7.2.2.21 Water Use Efficiency

The California Constitution prohibits the waste or unreasonable use of water. Further, Water Code Section 275 directs DWR and the State Water Board to "take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste or unreasonable use of water." Several legislative acts have been adopted to develop efficient use of water in the state:

- Urban Water Management Planning Act of 1985,
- Water Conservation in Landscaping Act of 1992,
- Agricultural Water Management Planning Act,
- Agricultural Water Suppliers Efficient Management Practices Act of 1990,
- Water Recycling Act of 1991, and
- Agricultural Water Conservation and Management Act of 1992.

The purpose of the WSLIP is to address flood issues; it would not result in the waste or unreasonable use of water.

7.2.2.22 Public Trust Doctrine

When planning and allocating water resources, the State of California is required to consider the public trust and preserve for the public interest the uses protected by the trust. The public trust doctrine embodies the principle that certain resources, including water, belong to all and, thus, are held in trust by the state for future generations.

In common law, the public trust doctrine protects navigation, commerce, and fisheries uses in navigable waterways. However, the courts have expanded the doctrine's application to include protecting tideland, wildlife, recreation, and other public trust resources in their natural state for recreational, ecological, and habitat purposes as they affect birds and marine life in navigable waters. *The National Audubon Society v. Superior Court of Alpine County* (1983) 33 Cal 3d 419 decision extended the public trust doctrine's limitations on private rights to appropriative water rights, and also ruled that longstanding water rights could be subject to reconsideration and could possibly be curtailed. The doctrine, however, generally requires the court and the State Water Board to perform a balancing test to weigh the potential value to society of a proposed or existing diversion against its impact on trust resources.

The 1986 Rancanelli decision applied the public trust doctrine to decisions by the State Water Board and held that this doctrine must be applied by the State Water Board in balancing all the competing interests in the uses of Bay-Delta waters (*United States v. State Water Resources Control Board* [1986] 182 Cal. App. 3d 82).

The WSLIP is consistent with the public trust doctrine, as its primary goals include improved flood control.

7.2.2.23 Davis-Dolwig Act

The Davis-Dolwig Act declares that recreation and fish and wildlife enhancement are among the purposes of state water projects. It specifies that costs for recreation and fish and wildlife enhancement not be included in prices, rates, and charges for water and power to urban and agricultural users. Under the Davis-Dolwig Act, land for recreation and fish and wildlife enhancement must be planned and initiated at the same time as any other land acquisition for the project. Implementation of the Program would include the construction of recreation facilities such as wildlife viewing areas, trails, boat ramps, and a promenade. Therefore, the WSLIP would be consistent with this act.

7.2.2.24 Relocation Assistance and Property Acquisition

The State of California's Government Code Section 7260, *et seq.* brings the California Relocation Act into conformity with the Federal Uniform Act. In the acquisition of real property by a public agency, both the Federal and state acts seek to (1) ensure consistent and fair treatment of owners of real property, (2) encourage and expedite acquisition by agreement to avoid litigation and relieve congestion in the courts, and (3) promote confidence in public land acquisition.

The Relocation Assistance and Real Property Acquisition Guidelines were established by 25 CCR 1.6. The guidelines were developed to assist public entities with developing regulations and procedures implementing Title 42, Chapter 61 of the USC, the Uniform Act, for Federal and Federally-assisted programs. The guidelines are designed to ensure that uniform, fair, and equitable treatment is given to people displaced from their homes, businesses, or farms as a result of the actions of a public entity. Under the act, persons required to relocate temporarily are not considered displaced, but must be treated fairly. Such persons have a right to temporary housing that is decent, safe, and sanitary, and must be reimbursed for all reasonable out-of-pocket expenses. In accordance with these guidelines, people may not suffer disproportionate injury as a result of action taken for the benefit of the public as a whole. Additionally, public entities must ensure consistent and fair treatment of owners of such property, and encourage and expedite acquisitions by agreement with owners of displaced property to avoid litigation.

Property acquisition and relocation services, compensation for living expenses for temporarily relocated residents, and negotiations regarding any compensation for temporary loss of business would be accomplished in accordance with the Uniform Act (see above) and California Government Code Section 7267 *et seq*.

7.2.3 State and Regional Plan Consistency

7.2.3.1 Clean Water Act, Section 303(d)

Under CWA Section 303(d), the RWQCB and the State Water Board list water bodies as impaired when not in compliance with designated water quality objectives and standards. A TMDL program must be prepared for waters identified by the state as impaired. A TMDL is a quantitative assessment of a problem that affects water quality. The problem can include the presence of a pollutant, such as a heavy metal or a pesticide, or a change in the physical property of the water, such as DO or temperature. A TMDL specifies the allowable load of pollutants from individual sources to ensure compliance with water quality standards. Once the allowable load and existing source loads have been determined, reductions in allowable loads are allocated to individual pollutant sources.

The WSLIP would have no effect on TMDL issues for the Sacramento River.

7.2.3.2 Water Rights

The State of California recognizes riparian and appropriative surface water rights. Riparian rights are correlative entitlements to water that are held by owners of land bordering natural watercourses. California requires a statement of diversion and use of natural flows on adjacent riparian land under a riparian right. Appropriative water rights allow the diversion of a specified amount of water from a source for reasonable and beneficial use during all or a portion of the year. In California, previously issued appropriative water rights are superior to and take precedence over newly granted rights. The State Water Board has authority to issue permits to grant appropriative water rights. The WSLIP is consistent with current water rights.

7.2.4 Local Plan Consistency and Regulatory Requirements

In addition to the Federal and state regulatory and local plan requirements, the project may be subject to certain zoning or other ordinances and general plans of Yolo County and the City of West Sacramento. For more discussion on local plans and requirements applicable to the project, refer to the Regulatory Setting part of the specific resource sections of interest within this document.

Chapter 8
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Chapter 9
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Ben Tustison, P.E. (MBK Engineers)	M.S. Civil Engineering, B.S. Geological Engineering; 11 years experience	Hydraulic Analyst (consultant to WSAFCA)
Eric Nagy, P.E. (HDR)	B.S. Civil Engineering; 12 years experience	Engineering Project Manager (consultant to WSAFCA)
Michael Vecchio, P.E. (HDR)	M.S. Civil Engineering, B.S. Geological Sciences, B.A. English; 13 years experience	Engineering Lead Designer (consultant to WSAFCA)

Chapter 10
List of Recipients

The following elected official and representatives, Federal, state, local agencies, private organizations, businesses, and residents of the City of West Sacramento would either receive a copy of the draft EIS/EIR or a notification of document availability. Individuals who may be affected by the project or have expressed interest through the public involvement process would also be notified.

10.1 Elected Officials and Representatives

- Alyson Huber, Assemblymember, 10th Assembly District
- Barbara Boxer, Senator, United States Senate
- Barbara Kondylis, Supervisor, Solano County—District 1
- Bill Berryhill, Assemblyman, 26th Assembly District
- Darrell Steinberg, State Senator, 6th Senate District
- Dianne Feinstein, Senator, United States Senate
- Don Nottoli, Supervisor, Sacramento County—District 5
- Doris Matsui, U.S. Congresswoman, 5th Congressional District
- Duane Chamberlain, Supervisor, Yolo County—District 5
- Helen Thomson, Supervisor, Yolo County—District 2
- James P. Spering, Supervisor, Solano County—District 3
- Jim Provenza, Supervisor, Yolo County—District 4
- Jimmie Yee, Supervisor, Sacramento County—District 2
- Joan Buchanan, Assemblymember, 15th Assembly District
- John Garamendi, U.S. Congressman, 10th Congressional District
- John M. Vasquez, Supervisor, Solano County—District 4
- Linda J. Seifert, Supervisor, Solano County—District 2
- Lois Wolk, State Senator, 5th Senate District
- Marika Yamada, Assemblymember, 8th Assembly District
- Matt Rexroad, Supervisor, Yolo County—District 3
- Michael J. Reagan, Supervisor, Solano County—District 5
- Mike McGowan, Supervisor, Yolo County—District 1
- Mike Thompson, U.S. Congressman, 1st Congressional District
- Roberta MacGlashan, Supervisor, Sacramento County—District 4
- Roger Dickinson, Supervisor, Sacramento County—District 1
- Susan Peters, Supervisor, Sacramento County—District 3

10.2 Government Department and Agencies

10.2.1 U.S. Government

- Federal Emergency Management Agency
- National Marine Fisheries Service
- Native American Heritage Commission
- U.S. Army Corps of Engineers, Sacramento District Environmental Analysis Section
- U.S. Bureau of Reclamation - Mid-Pacific Region
- U.S. Environmental Protection Agency, Region 9
- U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office
- United States Coast Guard, District 11
- USDA Natural Resources Conservation Service

10.2.2 State of California

- California Department of Boating and Waterways
- California Department of Conservation
- California Department of Fish and Game
- California Department of Parks and Recreation
- California Department of Transportation - District 3
- California Department of Water Resources
- California Highway Patrol Academy
- California Public Utilities Commission
- California State Lands Commission
- Central Valley Flood Protection Board
- Central Valley Regional Water Quality Control Board
- Delta Protection Commission
- Office of Historic Preservation
- Reclamation District 537
- Reclamation District 811
- Sacramento Metropolitan Air Quality Management District
- State Clearinghouse, Office of Planning & Research
- State Water Resources Control Board, Division of Water Rights
- West Sacramento Area Flood Control Agency
- Yolo-Solano Air Quality Management District

10.2.3 Regional, County and City

- City of Sacramento
- City of West Sacramento
- Contra Costa County
- Napa County Planning Commission
- Sacramento Area Flood Control Agency
- Sacramento County Planning and Community Development
- Sacramento County Regional Sanitation District
- Sacramento Public Library
- Solano County
- Solano County Library
- Sutter County Planning Division
- Washington Unified School District
- Yolo County Agricultural Commissioner
- Yolo County Environmental Health Department
- Yolo County Library
- Yolo County Planning Department
- Yolo County Transit District

10.3 Private Organizations, Businesses, and Residents

- Bill Falik
- Brown and Caldwell
- Cheryl and Bobby Cobbs
- Cindy Kawano
- Cliff Jones
- Dan Ramos
- David Doomey
- Downey Brand
- Friends of the Swainson's Hawk
- HDR Engineering
- Helen Smith
- James Bruchill & Associates
- Jeffrey Twitchell
- JF Schneider

- Joe Goeden
- John Ohslan
- Kiewit Pacific
- Laren Brandon
- MBK Engineers
- Pat Flint
- Port of West Sacramento
- Residents surrounding the CHP EIP and Rivers EIP Project sites
- Rodney Watson
- Save our City
- Sierra Holdings LLC
- Sierra Northern Railway
- The Grupe Company
- The Pacific Gas and Electric Company
- Trevor Burwell
- West Sacramento Historical Society
- Wildlands

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Appendix A

Scoping Report

ICF Jones & Stokes
an ICF International Company

Memorandum

Date:	March 27, 2009
To:	John Powderly, City of West Sacramento, Ken Ruzich, WSAFCA
cc:	Chris Elliott, ICF Jones & Stokes, Tanya Matson, ICF Jones & Stokes, Laurel Armer, ICF Jones & Stokes
From:	Jennifer Rogers, ICF Jones& Stokes
Subject:	**Public Meeting Summary for West Sacramento Levee Improvements Program EIS/EIR—February 2009**

Introduction

The West Sacramento Area Flood Control Agency (WSAFCA) is proposing the West Sacramento Levee Improvements Program (WSLIP) to improve the levees in Yolo and Solano Counties that protect the city of West Sacramento.

To protect human health and safety and prevent adverse effects on property and its economy, the City of West Sacramento (City), as part of WSAFCA, and in partnership with the California Department of Water Resources (DWR), embarked on a comprehensive evaluation of the condition of the levees protecting the city in 2006. The results of the comprehensive evaluation revealed several deficiencies that require substantial improvements.

The purpose and objective of the WSLIP is:

- achieve a minimum of a 200-year level of flood protection for the entire city by improving the approximately 50 miles of levees that protect it;
- construct levee improvements as soon as possible to reduce flood risk as quickly as possible;
- construct improvements that are politically, socially and environmentally acceptable; and
- provide recreational and open space elements for the city that are compatible with flood improvement actions.

To comply with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), WSAFCA and the USACE, respectively, are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to analyze and disclose the potential effects the WSLIP may have on the natural and human environment and identify mitigation measures and alternatives to avoid significant effects. WSAFCA is the project lead agency for the purposes of the California Environmental Quality Act and USACE is the project lead agency for the purposes of National Environmental Policy Act (NEPA).

The City and USACE have been carrying out scoping activities to assist them in determining the scope, focus and content of the EIS/EIR. The City and USACE have had ongoing inter-agency consultation with responsible and interested agencies such as the United States Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Game, to name a few. In addition, the City and USACE conducted two public scoping meetings for the public and for federal and state agency staff on February 12, 2009. The following summarizes the outreach conducted to inform responsible and interested agencies and the public of the proposed WSLIP, the scoping meetings, and the public comment received.

Noticing

Notice of Intent/Preparation

In compliance with the requirements set forth in CEQA, WSAFCA prepared a Notice of Preparation (NOP). The NOP contained a brief description of the proposed project, project date, probable environmental effects, the date, time and place of the public scoping meetings, and contact information. The NOP solicited participation in determining the scope of the EIS/EIR. On January 28, 2009 the NOP was sent to Responsible and Trustee Agencies and involved federal agencies, to the State Clearinghouse, and parties previously requesting notice in writing. The NOP was also provided to the county clerks of Yolo and Solano counties for a 30 day posting in their respective offices. The 30-day comment period on the NOP was January 28, 2009 to February 28, 2009.

In compliance with the requirements set forth in NEPA, USACE prepared a Notice of Intent (NOI) describing its intent to prepare an EIS/EIR, the proposed action, the possible alternatives, and relevant scoping meeting and contact information. The NOI was posted in the Federal Register, the United States Government's official noticing and reporting publication, on January 27, 2009. The official 30 day comment period for the NOI was January 27, 2009 to February 27, 2009.

Mailings

WSAFCA and the USACE developed a mailing list of West Sacramento parcel owners that are within 100 feet of haul routes and 500 feet of each of the three project-level sites and sent them a postcard invitation to the scoping meetings. Additionally, the City Lights newsletter, which is developed by the City, featured an article describing the WSLIP and noted the times and date of the meetings and was mailed to all residences in West Sacramento.

The Rivers Homeowners Association has also been contacted as their community will be directly affected by the levee improvements.

Legal Notices

Legal notices briefly introducing the lead agencies, the proposed WSLIP, and publicizing the scoping meetings were placed in the Sacramento Bee and the West Sacramento News-Ledger newspapers. The Sacramento Bee was intended to reach a regional public audience, and the West Sacramento News Ledger is a local newspaper that residents routinely rely upon to keep them abreast of City of West Sacramento activities. The notice was published in the Sacramento Bee and in the News-Ledger on Feb. 4, 2009.Because it was not a working day for some resource agencies on February 12 due to the observance of President's Day, USACE and WSAFCA conducted additional outreach to those agencies to ensure their comments on the scope were included. Telephone calls were made to 15 agencies that had previously been sent the NOP to ensure they received the NOP and determine if they intended to comment on the scope of the EIS/EIR. Up to two calls per agency were made in an attempt to contact them and invite them to provide their input on the scope of the EIS/EIR. The correspondence and outcome of each call was documented.

Appendix A contains copies of the following:

- Notice of Preparation (including resource agency mailing list)
- Notice of Intent
- Post card meeting invitation
- Resident mailing list
- City Lights newsletter
- Sacramento Bee and West Sacramento News Ledger public notices
- List of resource agencies contacted and call log

Public Meetings

Two public scoping meetings were held to inform the public of the proposed WSLIP and provide them an opportunity to provide comment and input on the range of alternatives, environmental effects, and any issues of concern they may have related to the proposed WSLIP. The two meetings were held on the same day, February 12, 2009; one from 3:30 to 5:30 p.m. and the other from 6:30 to 8:30 p.m., at the West Sacramento City Hall Galleria room. The meeting location was chosen as it is central to the West Sacramento community. The meeting times were chosen to accommodate both the work day schedules of public agency representatives and the general public, including residents and business owners.

The meetings were open-house style workshops in which attendees could read and view the information on about the WSLIP and interact with project staff including WSAFCA, USACE, the City, MBK and HDR Engineering consultant staff, and ICF Jones & Stokes environmental consulting staff.

Twenty-four graphic display boards were on display for attendees to review. The boards described and illustrated the WSLIP history, purpose, need and objectives, study area, levee deficiencies and potential improvements, environmental considerations, the CEQA/NEPA process and project timeline and were on display for attendees to review. WSLIP staff was stationed at display boards to interact with public attendees and provide additional detail or answer any questions.

A brief Power Point presentation was given to provide a brief introduction to the WSLIP objectives, schedule, environmental compliance, and related flood control work in the region.

A fact sheet was prepared and available for attendees to take with them. The fact sheet provided an overview of the WSLIP and its objectives, the study area, the environmental compliance process and some frequently asked questions provided answers relating to issues such as effects to the community, current levee safety, and funding.

Comment cards were prepared so that meeting attendees could provide feedback on the WSLIP. These cards could be filled out during the meeting and given to a project team member or filled out after the meeting and sent to the City before Feb. 28, 2009.

Appendix B contains copies of the following:

- display boards
- Power Point presentation
- Fact sheet
- Comment card

Public Feedback

There were 10 people in total who attended the two meetings. Ten people attended the meeting from 3:30 to 5:30 p.m. and there were no attendees at the second meeting from 6:30 to 8:30 p.m.

Five comments were received from the public regarding this EIS/EIR during the scoping period. Below is a list summarizing the written comments received.

- Special attention should be paid to the CHP Academy site as a portion of that early implementation site area encompasses piping, structures and equipment for the water treatment plant and the City's potable water supply.
- A comment was received regarding attention being paid to Old River Road 22 from West Sacramento to Woodland, which runs over top the Sacramento Weir and is a levee itself, which may have been damaged due to high frequency of semi-trucks on the road.
- A comment was received regarding the permitting of structures at the Rivers site and the City is required to pay for permits previously issued if building is not allowed to occur due to levee deficiencies.

- A comment addressed the vegetation on levees policy.
- A comment addressed how the homeless population living on and around the levees effects the environment.
- The CHP Academy provided comment in support of levee improvements and indicated there would be no direct construction impacts to their facility.
- The lead agencies should work closely with California Department of Fish and Game, U.S. Fish and Wildlife Service, NOAA Fisheries, and other resource agencies to mitigate for and avoid the cumulative loss of riparian vegetation.
- Queries of the Natural Diversity database and the U.S. Fish and Wildlife Special-Status Species database should be conducted to identify special-status species in the region.
- The draft EIS/EIR should consider a range of alternatives to prevent and slow the introduction of invasive species.
- Please include greenhouse gas emissions information consistent with the California Global Warming Solutions Act (AB 32), including an analysis of the amount of greenhouse gas emissions, a comparison of the amount to California inventories, a determination of significance and mitigation measures if required.
- A land and waterside noise and vibration evaluation should be conducted for effects on all plant and wildlife.
- A water quality, cultural resource, recreation, and air quality analysis should be conducted.
- A Central Valley Flood Protection Board encroachment permit may be required in addition to a geotechnical evaluation.

Commenter Mary Lasell also requested WSAFCA send her a graphic used at the meeting to depict the other flood control efforts happening currently in the Sacramento area. This graphic was sent to Ms. Lasell on March 20, 2009.

Appendix C contains copies of the following:

- Comments received from all interested parties

Next Steps

The comments received during the scoping period will assist in determining which issues are evaluated in detail in the EIS/EIR. Once alternatives have been developed based on the scoping process and preexisting information, they will be analyzed, and a draft EIR/EIS will be developed. Upon the release of the draft EIR/EIS in fall 2009, the public will have 60 days to comment on the document. Additionally, at least one public hearing will be held so the public and agencies can learn more about the draft EIR/EIS, ask questions regarding the analysis, and provide comments. At these meetings, the alternatives will be presented and explained.

Once the public comment period on the draft EIR/EIS has concluded, WSAFCA and USACE will consider and respond to all comments and prepare a final EIR/EIS. WSAFCA and USACE will consider all written comments in deciding which alternative(s) to select and implement and document that selection in a record of decision, no sooner than 30 days following publication of the final EIR/EIS.

Appendix A

Public noticing

BILLING CODE: 3720-58

DEPARTMENT OF DEFENSE

Department of the Army; Corps of Engineers

Notice of Intent to Prepare an Environmental Impact Statement/Environmental Impact Report for the West Sacramento Levee Improvements Program, West Sacramento, CA

AGENCY: Department of the Army, U.S. Army Corps of Engineers; DoD.

ACTION: Notice of intent.

SUMMARY: The action being taken is the preparation of a programmatic and project-specific Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the West Sacramento Levee Improvements Program (WSLIP) in Yolo County and Solano County, CA. Under 33 U.S.C. 408, the Chief of Engineers grants permission to alter an existing flood control structure if it is not injurious to the public interest and does not impair the usefulness of such work. Under Section 404 of the Clean Water Act, the District Engineer permits the discharge of dredged or fill material into waters of the United States if the discharge meets the requirements for the Environmental Protection Agency's 404 (b)(1) guidelines and is not contrary to the public interest. The U.S Army Corps of Engineers (Corps) will consider granting both 408 permission to the Central Valley Flood Protection Board (CVFPB) and 404 permit to West Sacramento Area Flood Control Agency (WSAFCA) for their work on the WSLIP. The CVFPB and WSAFCA are requesting this permission and permit in order to reduce flood risk the City of West Sacramento by meeting the following objectives for the project:

- Achieve a minimum of a 200-year level (an event that has a 0.5% chance of occurring in any given year) of flood protection for the entire City by improving approximately 50 miles of levees that protect it;
- Construct levee improvements as soon as possible to reduce flood risk as quickly as possible; and,
- Provide recreational and open space elements for the City that are compatible with flood improvement actions.

DATES: A public scoping meeting will be held on February 12, 2009 at 3:30 p.m. and 6:30 p.m. at the West Sacramento City Hall (see **ADDRESSES**). Send written comments by February 24, 2009 to (see **ADDRESSES**).

ADDRESSES: Public Scoping meeting, West Sacramento City Hall, 1110 West Capitol Avenue, West Sacramento, CA. Send written comments and suggestions concerning this study to Mr. Brian Buttazoni, U.S. Army Corps of Engineers, Sacramento District, Attn: Planning Division (CESPK-PD-RA), 1325 J Street, Sacramento, CA 95814 or to Mr. John Powderly, City of West Sacramento, 1110 West Capitol, Sacramento, CA 95691. Requests to be placed on the mailing list should also be sent to this address.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and EIS/EIR should be addressed to Brian Buttazoni at (916) 557-6956, e-mail *Brian.L.Buttazoni@usace.army.mil* or John Powderly at (916) 617-4674, e-mail *johnp@cityofwestsacramento.org* or by mail (see **ADDRESSES**).

SUPPLEMENTARY INFORMATION:

1. **Proposed Action.** The Corps and WSAFCA are preparing an EIS/EIR to analyze the impacts of the work proposed in WSLIP. The Corps will serve as the lead agency under the provisions of NEPA and WSAFCA will serve as the lead agency under the provisions of the California Environmental Quality Act (CEQA).

Several studies have been conducted since 1989 by the Corps, California Department of Water Resources (DWR), and WSAFCA to evaluate the condition of the various levees protecting the City of West Sacramento. These studies have indicated that the levee system is deficient and that the consequences of levee failure from a major flood event would be significant.

Since the early 1990s, WSAFCA and its partners have undertaken several levee repair projects to address urgent levee deficiencies that pose serious flood risk. Many of these repair projects were the result of deficiencies noted during routine operations and maintenance inspections and repairs were performed on a case-by-case basis.

In July 2006, in response to new Corps design standards and the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map modernization program, the City, as part of WSAFCA, determined that it was necessary to perform a comprehensive evaluation of all of the levees protecting the City to more definitely determine its current level of flood protection, determine the magnitude and severity of any deficiencies, and develop recommended strategies for improvement. For this most recent comprehensive evaluation, the levees were evaluated according to the latest Corps criteria for stability, seepage, erosion, geometry, and levee height. Data collected from the evaluation showed that much of the existing system does not provide protection from

a 100-year flood event (an event having a 1% chance of occurring in any given year), the commonly accepted minimum level of flood protection.

WSAFCA has identified the primary deficiencies of the levee system, which include: inadequate levee height, through-seepage and under-seepage, slope stability, seismic vulnerability, erosion, and non-compliant vegetation. The study area of the WSLJP includes the entire WSAFCA boundaries (over 50 miles of levees) which encompasses portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (DWSC). The study area has been subdivided into the following sub-reaches: Sacramento River Levee North, Sacramento River Levee South, Port North Levee, Port South Levee, South Cross Levee, Deep Water Ship Channel Levee East, Deep Water Ship Channel Levee West, Yolo Bypass Levee, and Sacramento Bypass Levee.

2. Alternatives. The EIS/EIR will address an array of flood control improvement alternatives at the *program level.* Alternatives analyzed during the investigation will include a combination of one or more flood protection measures. These measures include raising the existing levee; constructing an adjacent setback levee, cutoff walls, seepage berms, stability berms, internal drains, relief wells, or sheet-pile walls; slope flattening; placing stone protection; and vegetation removal.

Measures may be applied individually or combined to address deficiencies. For example, a seepage deficiency may be addressed by utilizing a seepage berm or a relief well, or a combination of both. Because each reach has a specific set of levee deficiencies and each levee deficiency has a number of different measures that could be utilized to improve the levee, WSAFCA is proposing to develop a range of alternatives

on a reach-by-reach basis rather than basin-wide to provide greater flexibility. Constraints that would be considered during the development of alternatives for each reach could include land use (i.e., development immediately adjacent to the levee), available area for various types of construction activities necessary to construct improvements, and other environmental effects. Future actions analyzed at the program level may or may not require additional analysis under a separate tiered environmental document(s). A No-Action Alternative will be analyzed at the program level.

Three sites have been identified that would be analyzed at the *project level* and included within the EIS/EIR. Also known as "Early Implementation Projects," these sites are known as CHP Academy, The Rivers, and the Sac Bank Extension Site. Analysis for the sites considered at the project level will include the analysis of No Action, a Preferred Alternative, and any other alternatives considered.

- ***CHP Academy Site.*** This site includes 4,500 feet of the Sacramento Bypass Levee and the northern 2,000 feet of the Sacramento River West North Levee, for a total length of 6,500 feet. Deficiencies include through-seepage and geometry. Under-seepage and stability deficiencies are also present in smaller pockets within this reach.
- ***The Rivers Site.*** This site is located just north of the confluence of the Sacramento and American Rivers, incorporating part of The Rivers residential development. The site extends from station 70+00 to station 115+00 on the Sacramento River, for a total length of approximately 4,500 feet. The site exhibits geometry, stability, and under-seepage deficiencies.

- ***Sac Bank Extension Site.*** This site is located just south of the barge canal on the Sacramento River and is the northern most end of the Sacramento River West South Levee. The site extends from station 270+00 to 332+50 for a total length of 6,250 feet. The site generally exhibits under-seepage, stability, and geometry deficiencies. There are a few locations which have erosion and levee height deficiencies as well. This site adjoins, complements, and extends a separate Corps project under the Sacramento River Bank Protection Project.

3. Scoping Process. *a.* Public scoping meetings will be held on February 12, 2009 to present information and to receive comments from the public. The Corps, with WSAFCA, has initiated a process to involve concerned individuals, and local, State, and Federal agencies.

b. Significant issues to be analyzed in depth in the EIS/EIR include effects on aesthetics, biological resources, hazards and hazardous materials, mineral resources, public services, utilities/service systems, agricultural resources, cultural resources, hydrology/water quality, noise, recreation, air quality, geology/soils, land use/planning, population/housing, transportation/traffic, and cumulative effects of related projects in the study area.

c. The Corps will consult with the State Historic Preservation Officer to comply with the National Historic Preservation Act, the U.S. Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration Fisheries Service to comply with the Endangered Species Act and the FWS to provide a Fish and Wildlife Coordination Act Report as an appendix to the EIS/EIR. Coordination will also be carried out with Native American and tribal groups. Consultation will be carried out on the three project

level sites analyzed in the document. Those reaches considered at the program level would be fully analyzed in the future under separate tiered environmental document(s) and consultation would be carried out at that time.

d. A 45-day public review period will be provided for individuals and agencies to review and comment on the draft EIS/EIR. All interested parties are encouraged to respond to this notice and provide a current address if they wish to be notified of the draft EIS/EIR circulation.

4. Availability. The draft EIS/EIR is anticipated to be available for public review and comment in mid 2009.

13 Jan 09
Date

THOMAS C. CHAPMAN, P.E.
COL, EN
Commanding

Form A

Notice of Completion and Environmental Document Transmittal

SCH #

For U.S. Mail: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

Project Title: West Sacramento Levee Improvements Program
Lead Agency: West Sacramento Area Flood Control Agency Contact Person: John Powderly
Street Address: 1110 West Capitol Avenue, Second Floor Telephone: 916-617-4645
City: West Sacramento Zip Code: 95691 County: Yolo

Project Location:
County: Yolo City Nearest Community: West Sacramento
Cross Streets: various Zip Code: 95691 and others
Assessor's Parcel No.: various Section: various Twp.: Range: Base:
Within 2 Miles: State Hwy #: Waterways:
Airports: Railways: Schools:

Document Type:
CEQA: ☒ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement to EIR
☐ Neg Dec ☐ Subsequent EIR
☐ Mit Neg Dec ☐ Other:

NEPA: ☐ NOI ☐ LA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other:

Local Action Type:
☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☒ Other: Flood Control Improvements

Development Type:
☐ Residential: *Units* *Acres*
☐ Office: *Sq ft.* *Acres* *Employees*
☐ Commercial: *Sq ft.* *Acres* *Employees*
☐ Industrial: *Sq ft* *Acres* *Employees*
☐ Educational:
☐ Recreational:
Total Acres (approximate):

☐ Water Facilities: *Type* *MGD*
☐ Transportation: *Type*
☐ Mining: *Mineral*
☐ Power: *Type* *MW*
☐ Waste Treatment: *Type* *MGD*
☐ Hazardous Waste: *Type*
☐ Other:

Project Issues That May Have a Significant or Potentially Significant Impact:
☒ Aesthetic Visual ☐ Fiscal ☒ Recreation Parks ☒ Vegetation
☒ Agricultural Land ☒ Flood Plain Flooding ☐ Schools Universities ☒ Water Quality
☒ Air Quality ☐ Forest Land Fire Hazard ☐ Septic Systems ☒ Water Supply Groundwater
☒ Archeological Historical ☐ Geologic Seismic ☐ Sewer Capacity ☒ Wetland Riparian
☒ Biological Resources ☐ Minerals ☒ Soil Erosion Compaction Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☐ Solid Waste ☒ Land Use
☒ Drainage Absorption ☒ Population Housing Balance ☐ Toxic Hazardous ☒ Cumulative Effects
☐ Economic Jobs ☒ Public Services Facilities ☒ Traffic Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:
various

Project Description: (please use a separate page if necessary)
See attached

RECEIVED
SOLANO COUNTY
JAN 28 2009
TREASURER-TAX COLLECTOR/
COUNTY CLERK

NOTE: Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2004

Form A, continued

Notice of Completion and Environmental Document Transmittal

Key
S = Document sent by lead agency
X = Document sent by SCH
D = Suggested distribution

Reviewing Agencies Checklist
Lead Agencies may recommend State Clearinghouse distribution by marking agencies below.

X Air Resources Board	X Office of Emergency Services
X Boating and Waterways, Department of	X Office of Historic Preservation
___ California Highway Patrol	X Parks and Recreation
___ Caltrans District #	___ Pesticide Regulation, Department of
___ Caltrans Division of Aeronautics	X Public Utilities Commission
___ Caltrans Planning	X Reclamation Board
___ Coachella Valley Mountains Conservancy	X Regional WQCB #
___ Coastal Commission	X Resources Agency
___ Colorado River Board Commission	___ S.F. Bay Conservation and Development Commission
X Conservation, Department of	___ San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy
___ Corrections, Department of	___ San Joaquin River Conservancy
X Delta Protection Commission	___ Santa Monica Mountains Conservancy
X Education, Department of	X State Lands Commission
Office of Public School Construction	___ SWRCB: Clean Water Grants
___ Energy Commission	___ SWRCB: Water Quality
X Fish and Game Region # North Central Region	___ SWRCB: Water Rights
___ Food and Agriculture, Department of	___ Tahoe Regional Planning Agency
___ Forestry and Fire Protection	___ Toxic Substances Control, Department of
___ General Services, Department of	___ Water Resources, Department of
___ Health Services, Department of	___ Other:
___ Housing and Community Development	
___ Integrated Waste Management Board	___ Other:
X Native American Heritage Commission	

Local Public Review Period (to be filled in by lead agency):
Starting Date: January 28, 2009 Ending Date: February 27, 2009

Lead Agency (complete if applicable):
Consulting Firm: ICF Jones & Stokes
Address: 2600 V Street
City State Zip: Sacramento, CA 95818
Contact: Chris Elliott
Telephone: 916-737-3000

Applicant:
Name: West Sacramento Area Flood Control Agency
Address: 1110 West Capitol Avenue, 2nd Floor
City State Zip: West Sacramento, CA 95692
Telephone: 916-617-4645

Signature of Lead Agency Representative Date: Jan 28, 2009

Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Section 21161, Public Resources Code.

Notice of Preparation

To: State Clearinghouse, Responsible Agencies, Trustee Agencies, Interested Parties
(Agency)
See Distribution List
(Address)

From: West Sacramento Area Flood Control Agency
(Agency)
1110 West Capitol Avenue
(Address)
West Sacramento, CA 95691

Subject: Notice of Preparation of a Draft Environmental Impact Statement/Environmental Impact Report

The United States Army Corps of Engineers (Corps), and the West Sacramento Area Flood Control Agency (WSAFCA) are proposing the West Sacramento Levee Improvements Program (WSLIP). The WSLIP would construct improvements to the levees protecting West Sacramento to meet local and federal flood protection criteria. The Corps, acting as the federal lead agency under the National Environmental Protection Act (NEPA), and WSAFCA, acting as lead agency under the California Environmental Quality Act (CEQA), have determined that an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared for the WSLIP. Responsible and trustee agencies under CEQA may include City of West Sacramento, Yolo County, California Department of Fish and Game, California Department of Water Resources, Central Valley Flood Protection Board, California Regional Water Quality Control Board, State Lands Commission, California Department of Parks and Recreation, and U.S. Fish and Wildlife Service.

WSAFCA and the Corps need to know your views regarding the scope and content of the environmental information in connection with the proposed WSLIP. Due to the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice (i.e., no later than 5 p.m. on February 29, 2009). Please mail or otherwise deliver your comments to:

John Powderly, Associate Planner
West Sacramento Flood Control Agency
1110 West Capital Avenue, 2nd Floor
West Sacramento, CA 95691
916-617-4645
Email: johnp@cityofwestsacramento.org

Brian L. Buttazoni, Biological Scientist
Sacramento District
U.S Army Corps of Engineers
1325 J Street
Sacramento, CA 95814
916-557-6956
Email: Brian.L.Buttazoni@usace.army.mil

Please provide a name for a contact person in your agency. In addition to or instead of providing written comments, input may also be provided at two public scoping meetings to be held on February 12 at 3:30 p.m. and 6:30 p.m., at the City of West Sacramento City Hall in the Galleria, 1110 West Capitol Avenue, West Sacramento.

Attachment 1 provides the schedule and location of the public scoping meeting and a general description of the proposed WSLIP along with a map of the WSLIP Study Area location. *Attachment 2* discusses the environmental factors potentially affected by the proposed project and the environmental topics to be addressed in the EIS/EIR.

Date: January 28, 2009

Signature: John Powderly

Title: Associate Planner, City of West Sacramento

Telephone: (916) 617-4645

Reference: California Code of Regulations, Title 14, CEQA Guidelines Sections 15082(a), 15103, 15375

Attachment 1

West Sacramento Levee Improvements Program
Draft EIR
Public Scoping Schedule and Program Background

SUMMARY: The action being taken is the preparation of a programmatic and project-specific Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the West Sacramento Levee Improvements Program (WSLIP) in Yolo County and Solano County, CA. Under 33 U.S.C. 408, the Chief of Engineers grants permission to alter an existing flood control structure if it is not injurious to the public interest and does not impair the usefulness of such work. Under Section 404 of the Clean Water Act, the District Engineer permits the discharge of dredged or fill material into waters of the United States if the discharge meets the requirements for the Environmental Protection Agency's 404 (b)(1) guidelines and is not contrary to the public interest. The U.S Army Corps of Engineers (Corps) will consider granting both 408 permission to the Central Valley Flood Protection Board (CVFPB) and 404 permit to West Sacramento Area Flood Control Agency (WSAFCA) for their work on the WSLIP. The CVFPB and WSAFCA are requesting this permission and permit in order to reduce flood risk the City of West Sacramento by meeting the following objectives for the project:

- Achieve a minimum of a 200-year level (an event that has a 0.5% chance of occurring in any given year) of flood protection for the entire City by improving approximately 50 miles of levees that protect it;
- Construct levee improvements as soon as possible to reduce flood risk as quickly as possible; and,
- Provide recreational and open space elements for the City that are compatible with flood improvement actions.

DATES: A public scoping meeting will be held on February 12, 2009 at 3:30 p.m. and 6:30 p.m. at the West Sacramento City Hall (see **ADDRESSES**). Send written comments by February 28, 2009 to (see **ADDRESSES**).

ADDRESSES: Public Scoping meeting will be held at West Sacramento City Hall, 1110 West Capitol Avenue, West Sacramento, CA.

Send written comments and suggestions concerning this study to Mr. Brian Buttazoni, U.S. Army Corps of Engineers, Sacramento District, Attn: Planning Division (CESPK-PD-RA), 1325 J Street, Sacramento, CA 95814 or to Mr. John Powderly, City of West Sacramento, 1110 West Capitol, Sacramento, CA 95691. Requests to be placed on the mailing list should also be sent to this address.

FOR FURTHER INFORMATION CONTACT: Questions about the proposed action and EIS/EIR should be addressed to: Brian Buttazoni at (916) 557-6957 or email at brian.l.buttazoni@usace.army.mil or John Powderly at (916) 617-4674 or email at johnp@cityofwestsacramento.org, or by mail (SEE ADDRESSES ABOVE).

SUPPLEMENTARY INFORMATION:

1. Proposed Action. The Corps and WSAFCA are preparing an EIS EIR to analyze the impacts of the work proposed in WSLIP. The Corps will serve as the lead agency under the provisions of NEPA and WSAFCA will serve as the lead agency under the provisions of the California Environmental Quality Act (CEQA).

Several studies have been conducted since 1989 by the Corps, California Department of Water Resources (DWR), and WSAFCA to evaluate the condition of the various levees protecting the City of West Sacramento. These studies have indicated that the levee system is deficient and that the consequences of levee failure from a major flood event would be significant.

Since the early 1990s, WSAFCA and its partners have undertaken several levee repair projects to address urgent levee deficiencies that pose serious flood risk. Many of these repair projects were the result of deficiencies noted during routine operations and maintenance inspections and repairs were performed on a case-by-case basis.

In July 2006, in response to new Corps design standards and the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map modernization program, the City, as part of WSAFCA, determined that it was necessary to perform a comprehensive evaluation of all of the levees protecting the City to more definitely determine its current level of flood protection, determine the magnitude and severity of any deficiencies, and develop recommended strategies for improvement. For this most recent comprehensive evaluation, the levees were evaluated according to the latest Corps criteria for stability, seepage, erosion, geometry, and levee height. Data collected from the evaluation showed that much of the existing system does not provide protection from a 100-year flood event (an event having a 1% chance of occurring in any given year), the commonly accepted minimum level of flood protection.

WSAFCA has identified the primary deficiencies of the levee system, which include: inadequate levee height, through-seepage and under-seepage, slope stability, seismic vulnerability, erosion, and non-compliant vegetation. The study area of the WSLIP includes the entire WSAFCA boundaries (over 50 miles of levees) which encompasses portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (DWSC). The study area has been subdivided into the following sub-reaches: Sacramento River Levee North, Sacramento River Levee South, Port North Levee, Port South Levee, South Cross Levee, Deep Water

Ship Channel Levee East, Deep Water Ship Channel Levee West, Yolo Bypass Levee, and Sacramento Bypass Levee.

2. Alternatives. The EIS/EIR will address an array of flood control improvement alternatives at the *program level*. Alternatives analyzed during the investigation will include a combination of one or more flood protection measures. These measures include raising the existing levee; constructing an adjacent setback levee, cutoff walls, seepage berms, stability berms, internal drains, relief wells, or sheet-pile walls; slope flattening; placing stone protection; and vegetation removal.

Measures may be applied individually or combined to address deficiencies. For example, a seepage deficiency may be addressed by utilizing a seepage berm or a relief well, or a combination of both. Because each reach has a specific set of levee deficiencies and each levee deficiency has a number of different measures that could be utilized to improve the levee, WSAFCA is proposing to develop a range of alternatives on a reach-by-reach basis rather than basin-wide to provide greater flexibility. Constraints that would be considered during the development of alternatives for each reach could include land use (i.e., development immediately adjacent to the levee), available area for various types of construction activities necessary to construct improvements, and other environmental effects. Future actions analyzed at the program level may or may not require additional analysis under a separate tiered environmental document(s). A No-Action Alternative will be analyzed at the program level.

Three sites have been identified that would be analyzed at the *project level* and included within the EIS/EIR. Also known as "Early Implementation Projects," these sites are known as CHP Academy, The Rivers, and the Sac Bank Extension Site. Analysis for the sites considered at the project level will include the analysis of No Action, a Preferred Alternative, and any other alternatives considered.

- ***CHP Academy Site.*** This site includes 4,500 feet of the Sacramento Bypass Levee and the northern 2,000 feet of the Sacramento River West North Levee, for a total length of 6,500 feet. Deficiencies include through-seepage and geometry. Under-seepage and stability deficiencies are also present in smaller pockets within this reach.
- ***The Rivers Site.*** This site is located just north of the confluence of the Sacramento and American Rivers, incorporating part of The Rivers residential development. The site extends from station 70+00 to station 115+00 on the Sacramento River, for a total length of approximately 4,500 feet. The site exhibits geometry, stability, and under-seepage deficiencies.
- ***Sac Bank Extension Site.*** This site is located just south of the barge canal on the Sacramento River and is the northern most end of the Sacramento River West South Levee. The site extends from station 270+00 to 332+50 for a total length of 6,250 feet. The site generally exhibits under-seepage, stability, and geometry deficiencies. There are a few locations which have erosion and levee height deficiencies as well. This site adjoins, complements, and extends a separate Corps project under the Sacramento River Bank Protection Project.

3. Scoping Process.

a. Public scoping meetings will be held on February 12, 2009 to present information and to receive comments from the public. The Corps, with WSAFCA, has initiated a process to involve concerned individuals, and local, State, and Federal agencies.

b. Significant issues to be analyzed in depth in the EIS/EIR include effects on aesthetics, biological resources, hazards and hazardous materials, mineral resources, public services, utilities/service systems, agricultural resources, cultural resources, hydrology/water quality, noise, recreation, air quality, geology/soils, land use/planning, population/housing, transportation/traffic, and cumulative effects of related projects in the study area.

c. The Corps will consult with the State Historic Preservation Officer to comply with the National Historic Preservation Act, the U.S. Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration Fisheries Service to comply with the Endangered Species Act and the FWS to provide a Fish and Wildlife Coordination Act Report as an appendix to the EIS/EIR. Coordination will also be carried out with Native American and tribal groups. Consultation will be carried out on the three project level sites analyzed in the document. Those reaches considered at the program level would be fully analyzed in the future under separate tiered environmental document(s) and consultation would be carried out at that time.

d. A 45-day public review period will be provided for individuals and agencies to review and comment on the draft EIS/EIR. All interested parties are encouraged to respond to this notice and provide a current address if they wish to be notified of the draft EIS/EIR circulation.

4. Availability. The draft EIS/EIR is anticipated to be available for public review and comment in mid 2009.

Attachment 2

West Sacramento Levee Improvements Program Draft EIS/EIR
Notice of Preparation

Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by the proposed project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact").

X Aesthetics	X Agricultural Resources	X Air Quality
X Biological Resources	X Cultural Resources	X Geology/Soils
X Hazards and Hazardous Materials	X Hydrology/Water Quality	X Land Use Planning
X Mandatory Findings of Significance	X Mineral Resources	X Noise
X Population/Housing	X Public Services	X Recreation
X Socioeconomics and Environmental justice	X Transportation/Traffic	X Utilities/Service Systems

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DELTA PROTECTION COMMISSION
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Fire Dept.
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AND GAME-North Central Region
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RANCHO CORDOVA, CA 95670

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DEPT OF BOATING & WATERWAYS
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Police Department
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CA DEPARTMENT OF PARKS &
RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001

State Historian III
Office of Historic Preservation
1416 9th Street, Room 1442-7
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Asst. City Manager
1110 West Capitol Ave., 3rd floor
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CALIFORNIA DEPARTMENT OF
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Native American Heritage
Commission
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RECLAMATION DISTRICT 811-
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Colusa County
Director
220 12th Street
Colusa, Ca 95932

Friends of the Swainson's Hawk
President
915 L Street, C-425
Sacramento. Ca 95814

President
Sierra Northern Railway
341 Industrial Way
Woodland, Ca 95776

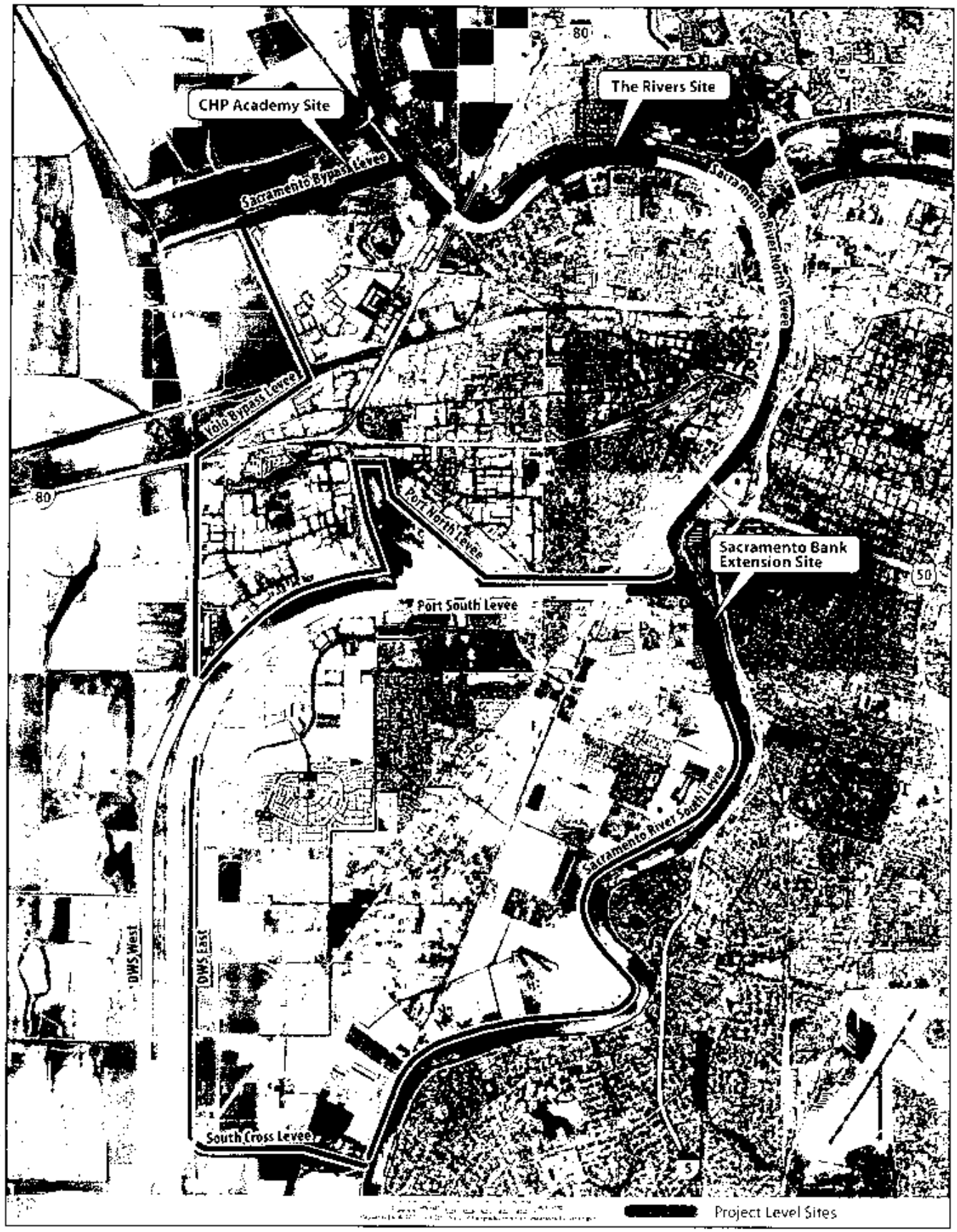
Solano County
Director of Public Works and Planning
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Fairfield. Ca 94533

FEMA Region IX
Federal Emergency Management
Agency Director
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USDA Natural Resources Conservation
Service
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Woodland. Ca 95695

Department of Water Resources
Division of Water Resources
PO Box 942836
Sacramento. Ca 94236

Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way,
Sacramento CA 95825



ICF Jones & Stokes

Figure 1
West Sacramento Flood Improvement Program
Study Area

Notice of Preparation of a Draft Environmental Impact Statement/Environmental Impact Report

The United States Army Corps of Engineers (Corps), and the West Sacramento Area Flood Control Agency (WSAFCA) are proposing the West Sacramento Levee Improvements Program (WSLIP). The Program would construct improvements to the levees protecting West Sacramento to meet local and federal flood protection criteria. The Corps, acting as the federal lead agency under the National Environmental Protection Act (NEPA), and WSAFCA, acting as lead agency under the California Environmental Quality Act (CEQA), have determined that an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared for the WSLIP.

WSAFCA and the Corps need to know your views regarding the scope and content of the environmental information in connection with the proposed WSLIP. Due to time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice (i.e., no later than 5 p.m. on February 28, 2009). Please mail or otherwise deliver your comments to:

John Powderly, Associate Planner
West Sacramento Flood Control Agency
1110 West Capitol Avenue 2nd Floor
West Sacramento, CA 95691

Please provide a name for a contact person in your agency. In addition to or instead of providing written comments, input may also be provided at two public scoping meetings to be held on February 12 at 3:30 p.m. and 6:30 p.m., in the Galleria, 1110 West Capitol Avenue, West Sacramento.

City of West Sacramento
Levee Improvements Program

The U.S. Army Corps of Engineers (Corps), the West Sacramento Area Flood Control Agency (WSAFCA), and the City of West Sacramento (the City) will be working in your neighborhood to improve flood protection.

Join us at a public scoping meeting to learn more about the West Sacramento Levee Improvements Program (WSLIP) and to provide input on the associated Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

WSAFCA and the City held a scoping meeting in November 2007 regarding the development of an EIR for this levee improvement program. Now that the Corps has joined the project as the federal lead agency, the upcoming scoping meeting will focus on the development of a joint EIS/EIR. The EIS portion will fulfill federal requirements, as the EIR fulfills state requirements. The EIS/EIR will disclose the environmental effects that may result from implementation of the WSLIP.

The goal of the WSLIP is to achieve a 200-year level of flood protection for West Sacramento residents.

For More Information

- John Powderly, Associate Planner, City of West Sacramento at (916) 617-4645
- Brian Buttazoni, Biological Scientist, US Army Corps of Engineers (916) 557-6956

SAVE THE DATE!

Public Scoping Meetings

Date
Thursday, Feb. 12, 2009

Times
3:30–5:30 p.m. and
6:30–8:30 p.m.

Location
West Sacramento City Hall
Galleria, 1st Floor
1110 West Capitol Avenue
West Sacramento 95691

U.S. Army
Corps of Engineers

West Sacramento
Levee Improvements Program

Attn: John Powderly, Associate Planner
City of West Sacramento
1110 West Capitol Avenue 2nd Floor
West Sacramento, CA 95691

PLACE
POSTAGE
HERE

SAVETHEDATE!

Thursday, Feb. 12, 2009

U.S. Army
Corps of Engineers

Owner
10 NAUTICA CT
SACRAMENTO, CA 95833

Owner
10 TADLOCK PL
WOODLAND,CA 95776

Owner
100 DUNBAR ST
SPARTANBURG, SC 29306

Owner
1000 FOUNTAIN DR
WEST SACRAMENTO, CA 95605

Owner
1000 SACRAMENTO AVE
WEST SACRAMENTO, CA 95605

Owner
1001 CLARK AVE
YUBA CITY, CA 95991

Owner
1001 FOUNTAIN DR
WEST SACRAMENTO, CA 95605

Owner
1001 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
10018 SEATTLE STEW LN
ELK GROVE, CA 95624

Owner
1002 FOUNTAIN DR
WEST SACRAMENTO, CA 95605

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1005 FOUNTAIN DR
WEST SACRAMENTO, CA 95605

Owner
1006 4TH ST STE 701
SACRAMENTO CA 95814

Owner
1009 CHARLES ST
WEST SACRAMENTO, CA 0

Owner
1009 POPLAR LN
WOODLAND, CA 95695

Owner
101 N TRYON ST
CHARLOTTE, NC 28255

Owner
101 PARKSHORE DR #100
FOLSOM CA 95630

Owner
1012 CORNHILL WAY
FOLSOM CA 95630

Owner
1012 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
1015 B AIRPORT RD
RIO VISTA CA 94571

Owner
1015 FOUNTAIN DR
WEST SACRAMENTO CA 95605

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1016 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

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1019 FOUNTAIN DR
WEST SACRAMENTO CA 95605

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1020 W CAPITOL AVE
WEST SACRAMENTO CA 95691

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1021 HAVERHILL ST
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1023 FOUNTAIN DR
WEST SACRAMENTO CA 95605

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1024 SOULE ST
WEST SACRAMENTO CA 95691

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1027 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
1030 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1030 WATERFORD DR
WEST SACRAMENTO CA 95605

Owner
1031 COVE WAY
BEVERLY HILLS CA 90210

Owner
1032 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

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1034 WATERFORD DR
WEST SACRAMENTO CA 95605

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1035 FOUNTAIN DR
WEST SACRAMENTO CA 95605

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1036 MEADOW RD
WEST SACRAMENTO CA 95691

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1037 CHARLES ST
WEST SACRAMENTO CA 95605

Owner
104 WILMOT RD MS #1420
DEERFIELD IL 60015

Owner
1040 LONGCROFT ST
WEST SACRAMENTO CA 95691

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1040 WATERFORD DR
WEST SACRAMENTO CA 95605

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1041 FOUNTAIN DR
WEST SACRAMENTO CA 95605

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1045 FOUNTAIN DR
WEST SACRAMENTO CA 95605

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1045 PARK BLVD
WEST SACRAMENTO CA 95691

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WEST SACRAMENTO CA 95691

Owner
1049 N GLASSELL ST
ORANGE CA 92867

Owner
1053 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
10545 ARMSTRONG AVE STE 202D
MATHER CA 95655

Owner
1057 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
10606 CALVINE RD
SACRAMENTO CA 95830

Owner
110 110TH AVE NE SUITE 550
BELLEVUE WA 98004

Owner
110 110TH AVE NE SUITE 550
BELLEVUE WA 98004

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110 110TH AVE NE SUITE 550
BELLEVUE WA 98004

Owner
1100 TOWN & COUNTRY RD
ORANGE CA 92868

Owner
110-110TH AVE NE STE 520
BELLEVUE WA 98004

Owner
1107 KENTUCKY ST
FAIRFIELD CA 94583

Owner
1108 SACRAMENTO AVE
WEST SACRAMENTO CA 95691

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1110 WEST CAPITOL AVE
WEST SACRAMENTO CA 95691

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1112 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
1114 PIEDMONT RD
SAN JOSE CA 95132

Owner
1121 SW SALMON ST 4TH FLOOR
PORTLAND OR 97205

Owner
1122 17TH ST #309
SACRAMENTO CA 95814

Owner
1131 EL CERRITO DR
SANTA ROSA CA 95401

Owner
11423 SUNRISE GOLD CIR #16
RANCHO CORDOVA CA 95742

Owner
1144 PARK CIRCLE
WEST SACRAMENTO CA 95691

Owner
116 VIA NICOLA
WATSONVILLE CA 95076

Owner
1160 CHESS DR STE 8
FOSTER CITY CA 0

Owner
1160 FERNWOOD ST
WEST SACRAMENTO CA 95691

Owner
1161 BRYANT RD
LONG BEACH CA 90815

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1161 BRYANT RD
LONG BEACH CA 90815

Owner
1191 ROSE TREE WAY
SACRAMENTO CA 95831

Owner
1199 BERRY CREEK RD
WEST SACRAMENTO CA 95691

Owner
1200 BERRY CREEK RD
WEST SACRAMENTO CA 95691

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1200 TRIANGLE CT
WEST SACRAMENTO CA 95605

Owner
1206 RUESS RD
RIPON CA 92366

Owner
1207 BERRY CREEK RD
WEST SACRAMENTO CA 95691

Owner
121 SPEAR ST STE 250
45030271 94105

Owner
121 SPEAR ST STE 250
SAN FRANCISCO CA 94105

Owner
1213 COLD SPRINGS RD
WEST SACRAMENTO CA 95691

Owner
1215 BERRY CREEK RD
WEST SACRAMENTO CA 95691

Owner
1221 COLD SPRINGS RD
WEST SACRAMENTO CA 95691

Owner
12225 STEPHENS RD
WARREN MI 48089

Owner
1223 BERRY CREEK RD
WEST SACRAMENTO CA 95691

Owner
1229 COLD SPRINGS RD
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1237 COLD SPRINGS RD
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1239 BERRY CREEK RD
WEST SACRAEMNTO CA 95691

Owner
1240 SACRAMENTO AVE
WEST SACRAMENTO CA 95605

Owner
12401 W OLYMPIC BLVD
LOS ANGELES CA 0

Owner
1245 COLD SPRINGS RD
WEST SACRAMENTO CA 95691

Owner
1245 LINDEN RD
WEST SACRAMENTO CA 95691

Owner
12465 LADD LN
AUBURN CA 95603

Owner
1248 FRONTERA WAY
MILLBRAE CA 94030

Owner
1250 8TH AVE
SACRAMENTO CA 95818

Owner
1255 STARBOARD DR
WEST SACRAMENTO CA 95691

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1255 TRIANGLE CT
WEST SACRAMENTO CA 95691

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1259 MILANO DR #1
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1261 W CAPITOL AVE
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1262 MILANO DR #1
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1262 MILANO DR #7
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1267 MERKLEY AVE
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1268 MILANO DR #1
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1280 RIVA DR #3
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1280 RIVA DR #4
WEST SACRAMENTO CA 95691

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1284 MILANO DR #6
WEST SACRAMENTO CA 95691

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1300 JEFFERSON BLVD
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1300 NATIONAL DR STE #100
SACRAMENTO CA 95834

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1301 S E 10TH ST STR 3652-00
BENTONVILLE AR 72716

Owner
13155 NOEL RD LB #71
DALLAS TX 75240

Owner
1316 FAIRWAY DR
IONE CA 95640

Owner
1316 GAGLE WAY
SACRAMENTO CA 95831

Owner
1325 J ST REAL ESTATE DIV
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Owner
1335 HEATHER LN
BROOKINGS OR 97415

Owner
1335 WINDEMERE CT
WEST SACRAMENTO CA 95605

Owner
1343 SOMERSET AVE
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Owner
1345 WINDEMERE CT
WEST SACRAMENTO CA 95691

Owner
135 S ROSEMEAD BLVD
PASADENA CA 91107

Owner
13502 HAMBURGER LN
BALDWIN PARK CA 91706

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1351 SOMERSET DR
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Owner
1355 SOMERSET DR
WEST SACRAMENTO CA 95605

Owner
1365 WINDEMERE CT
WEST SACRAMENTO CA 95605

Owner
1375 WINDEMERE CT
WEST SACRAMENTO CA 95605

Owner
1380 GALAXY WAY
CONCORD CA 94521

Owner
1385 WINDEMERE CT
WEST SACRAMENTO CA 95605

Owner
1390 WINDEMERE CT
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #11
WEST SACRAMENTO CA 95605

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1399 SACRAMENTO AVE #120
WEST SACRAMENTO CA 95605

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1399 SACRAMENTO AVE #121
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1399 SACRAMENTO AVE #127
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1399 SACRAMENTO AVE #128
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #13
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #130
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #131
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #132
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #133
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #134
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #135
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #136
WEST SACRAMENTO CA 95691

Owner
1399 SACRAMENTO AVE #137
WEST SACRAMENTO CA 95691

Owner
1399 SACRAMENTO AVE #139
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #141
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #143
WEST SACRAMENTO CA 95691

Owner
1399 SACRAMENTO AVE #144
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #145
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #150
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #152
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #153
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #154
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #155
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #2
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE #3
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE SP 1
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE SP 126
WEST SACRAMENTO CA 95605

Owner
1399 SACRAMENTO AVE SP 14
WEST SACRAMENTO CA 95605

Owner
1400 LA SIERRA DR
SACRAMENTO CA 95864

Owner
1401 SHORE ST
WEST SACRAMENTO CA 95691

Owner
1408 HOBSON AVE
WEST SACRAMENTO CA 95605

Owner
1408 HOBSON AVE
WEST SACRAMENTO CA 95605

Owner
1410 LOMITA DR
PASADENA CA 91106

Owner
1414 SANTA ANA AVE
SACRAMENTO CA 95838

Owner
1416 9TH ST RM 425
SACRAMENTO CA 95814

Owner
1416 9TH ST RM 431
SACRAMENTO CA 95814

Owner
1420 MERKELEY AVE #6
WEST SACRAMENTO CA 95691

Owner
1425 BROADWAY #16
BURLINGAME CA 94010

Owner
1429 DOBROS DR
WEST SACRAMENTO CA 95605

Owner
1432 MIKON ST
WEST SACRAMENTO CA 95605

Owner
1432 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1448 PERKINS WAY
SACRAMENTO CA 95818

Owner
1450 HARBOR BLVD STE B
WEST SACRAMENTO CA 95691

Owner
1450 W HARBOR BLVD STE B
WEST SACRAMENTO CA 95691

Owner
1451 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1455 RESPONSE RD #140
SACRAMENTO CA 95815

Owner
1457 SACRAMENTO AVE
WEST SACRAMENTO CA 95605

Owner
1477 DREW AVE #103
DAVIS CA 95618

Owner
14775 WICKS BLVD
SAN LEANDRO CA 94577

Owner
14855 WICKS BLVD
SAN LEANDRO CA 94577

Owner
15 GATEHOUSE CT
SACRAMENTO CA 95826

Owner
1500 RANDOLPH RD
WEST SACRAMENTO CA 95691

Owner
1500 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1500A S RIVER RD
WEST SACRAMENTO CA 95691

Owner
1501 FALLBROOK ST
WEST SACRAMENTO CA 95691

Owner
1501 FALLBROOK ST
WEST SACRAMENTO CA 95691

Owner
1501 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1506-1508 SACRAMENTO AVE
WEST SACRAMENTO CA 95691

Owner
1506-1508 SACRAMENTO AVE
WEST SACRAMENTO CA 95691

Owner
1507 VIRGINIA AVE
WEST SACRAMENTO CA 95691

Owner
1508 MICHIGAN BLVD
WEST SACRAMENTO CA 95691

Owner
1508 NORFOLK AVE
WEST SACRAMENTO CA 95691

Owner
1509 VIRGINIA AVE
WEST SACRAMENTO CA 95691

Owner
1510 RANDOLPH RD
WEST SACRAMENTO CA 95691

Owner
1513 VIRGINIA AVE
WEST SACRAMENTO CA 95691

Owner
1517 VIRGINIA AVE
WEST SACRAMENTO CA 95691

Owner
1520 RANDOLPH RD
WEST SACRAMENTO CA 95691

Owner
1522 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
1530 J ST SUITE 200
SACRAMENTO CA 95814

Owner
1530 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1541 SACRAMENTO AVE
WEST SACRAMENTO CA 95605

Owner
1545 RIVER PARK DR #201
SACRAMENTO CA 95815

Owner
1545 SACRAMENTO AVE
WEST SACRAMENTO CA 95605

Owner
1550 PARKWAY BLVD
WEST SACRAMENTO CA 95691

Owner
1550 RANDOLPH RD
WEST SACRAMENTO CA 95691

Owner
1550 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1571 VERMONT AVE
WEST SACRAMENTO CA 95691

Owner
1579 VERMONT AVE
WEST SACRAMENTO CA 95691

Owner
1585 VERMONT AVE
WEST SACRAMENTO CA 95691

Owner
1586 COLUMBIA RD
WEST SACRAMENTO CA 95691

Owner
160 VISTA COVE CIR
SACRAMENTO CA 95835

Owner
1601 VERMONT AVE
WEST SACRAMENTO CA 95691

Owner
1605 VERMONT AVE
WEST SACRAMENTO CA 95691

Owner
1609 MARYLAND AVE
WEST SACRAMENTO CA 95691

Owner
1617 SACRAMENTO AVE
WEST SACRAMENTO CA 95605

Owner
1617 T ST
SACRAMENTO CA 95814

Owner
1620 LAUREL LN
WEST SACRAMENTO CA 95691

Owner
1620 SACRAMENTO AVE
WEST SACRAMENTO CA 95605

Owner
1624 SACRAMENTO CA
WEST SACRAMENTO CA 95605

Owner
1633 CHURCH ST STE 500
NASHVILLE TN 37203

Owner
1651 TOLEDO CT
PACIFICA CA 94044

Owner
1661 ALTON PKWY
IRVINE CA 92714

Owner
1665 ORINDA PL
WEST SACRAMENTO CA 95691

Owner
1675 TAMARACK
WEST SACRAMENTO CA 95691

Owner
168 COURT ST
WOODLAND CA 95695

Owner
1700 S LEWIS ST
ANAHEIM CA 92805

Owner
1700 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1701 PORTSMOUTH AVE
WEST SACRAMENTO CA 95691

Owner
17032 KOMORI CT
GARDENA CA 90247

Owner
1705 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1720 DEERWOOD ST
WEST SACRAMENTO CA 95691

Owner
1720 WESTWOOD CIR
WEST SACRAMENTO CA 95691

Owner
1722 3RD ST #102
SACRAMENTO CA 95814

Owner
1722 3RD ST #102
SACRAMENTO CA 95814

Owner
1724 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1733 MOUNT RAINIER AVE
MILPITAS CA 95035

Owner
1733 REED AVE
WEST SACRAMENTO CA 95605

Owner
17364 BRYANT RD
LAKE OSWEGO OR 97035

Owner
1737 REED AVE
WEST SACRAMENTO CA 95606

Owner
1739 MARIPOSA CIR
DAVIS CA 95616

Owner
1740 EDGEMORE AVE
SACRAMENTO CA 95835

Owner
1741 REED AVE
WEST SACRAMENTO CA 95691

Owner
1751 CEBRIAN ST
WEST SACRAMENTO CA 95691

Owner
1751 EASTERN AVE
SACRAMENTO CA 95864

Owner
1752 REED AVE
WEST SACRAMENTO CA 95605

Owner
1757 TAPO CANYON RD SVW-88
SIMI VALLEY CA 93063

Owner
1757 TAPO VALLEY RD SVW-88
SIMI VALLEY CA 93063

Owner
1768 COLLINGSWOOD CT
WESTLAKE VILLAGE CA 91362

Owner
1777 MURCHISON DR
BURLINGAME CA 0

Owner
1780 C 36TH ST
SACRAMENTO CA 95816

Owner
1782 TRINITY WAY
WEST SACRAMENTO CA 95691

Owner
1790 TERMINAL ST
WEST SACRAMENTO CA 95691

Owner
18 LOOKOUT CT
SACRAMENTO CA 95831

Owner
1800 3RD ST STE 250
SACRAMENTO CA 95811

Owner
1800 SOUTH RIVER RD
WEST SACRAMENTO CA 95691

Owner
1800 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1807 13TH ST
SACRAMENTO CA 95814

Owner
1807 13TH ST
SACRAMENTO CA 95814

Owner
181 DANZ LN
FREDERICKSBURG TX 0

Owner
1810 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1817 MARYAL DR STE 300
SACRAMENTO CA 95864

Owner
1817 MICHIGAN BLVD
WEST SACRAMENTO CA 95691

Owner
1825 BELL ST #100
SACRAMENTO CA 95825

Owner
1833 WILLOW AVE
WEST SACRAMENTO CA 95691

Owner
1838 SPOKANE RD
WEST SACRAMENTO CA 95691

Owner
1841 WEST CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
185 WOODVIEW DR
FOLSOM CA 95630

Owner
1851 HERITAGE LN #128
SACRAMENTO CA 95815

Owner
1880 ENTERPRISE BLVD
WEST SACRAMENTO CA 95691

Owner
18818 TELLER AVE STE 277
IRVINE CA 92612

Owner
1900 9TH AVE
SACRAMENTO CA 95818

Owner
1903 CAROLINA AVE
WEST SACRAMENTO CA 95691

Owner
1904 MERKLEY AVE
WEST SACRAMENTO CA 95691

Owner
1911 BLACK SLATE CT
GOLD RIVER CA 0

Owner
1911 CAROLINA AVE
WEST SACRAMENTO CA 95691

Owner
19130 CR 124
WEST SACRAMENTO CA 95691

Owner
1915 CAROLINA AVE
WEST SACRAMENTO CA 95691

Owner
1917 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1919 SPANOS CT
SACRAMENTO CA 95825

Owner
1922 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1925 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
1936 CAROLINA AVE
WEST SACRAMENTO CA 95691

Owner
1939 HARRISON ST STE 605
OAKLAND CA 94612

Owner
19400 NE 5TH ST
CAMAS WA 98607

Owner
195 N 1ST ST 2ND FLOOR
DIXON CA 95620

Owner
1960 CHANNEL DR
WEST SACRAMENTO CA 95691

Owner
1980 SO RIVER RD
WEST SACRAMENTO CA 0

Owner
1983 W 190TH ST STE 100
TORRANCE CA 90504

Owner
2 INGRAM BLVD
LA VERGNE TN 37089

Owner
20 ALAMEDA BLVD
WEST SACRAMENTO CA 95691

Owner
200 SANDS CT
WEST SACRAMENTO CA 95605

Owner
200 TROPHY CT
WEST SACRAMENTO CA 95605

Owner
200 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2000 W CAPITOL AVE SP 110
WEST SACRAMENTO CA 95691

Owner
2001 2ND ST STE 4
DAVIS CA 95618

Owner
2009 ORCHARD ST
SANTA ROSA CA 95404

Owner
2009 ORCHARD ST
SANTA ROSA CA 95404

Owner
201 CLASSIC CT
WEST SACRAMENTO CA 95605

Owner
201 TROPHY CT
WEST SACRAMENTO CA 95605

Owner
201 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
202 CLASSIC CT
WEST SACRAMENTO CA 95605

Owner
202 ROYAL OAKS DR
WEST SACRAMENTO CA 95605

Owner
202 TARQUINIA CT
EL DORADO HILLS CA 95762

Owner
202 TOUCHSTONE PL
WEST SACRAMENTO CA 95691

Owner
2021 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
20254 WILLIAMSBURG LN
SARATOGA CA 95070

Owner
2028 MANZANITA WAY
WEST SACRAMENTO CA 95691

Owner
2041 BRANDING IRON CT
FOLSOM CA 95630

Owner
2051 JUNCTION AVE STE 100
SAN JOSE CA 95131

Owner
208 ROYAL OAKS DR
WEST SACRAMENTO CA 95605

Owner
208 TROPHY CT
WEST SACRAMENTO CA 95605

Owner
2080 ENTERPRISE BLVD
WEST SACRAMENTO CA 95691

Owner
209 SANDS CT
WEST SACRAMENTO CA 95605

Owner
210 SANDS CT
WEST SACRAMENTO CA 95605

Owner
210 TOUCHSTONE PL
WEST SACRAMENTO CA 95691

Owner
211 CLASSIC CT
WEST SACRAMENTO CA 95605

Owner
2110 ENTERPRISE BLVD
WEST SACRAMENTO CA 95691

Owner
2125 HEARST ST
WEST SACRAMENTO CA 95691

Owner
2125 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
213 SANDS CT
WEST SACRAMENTO CA 95605

Owner
213 SELBY RANCH RD #4
SACRAMENTO CA 95864

Owner
2135 HEARST ST
WEST SACRAMENTO CA 95691

Owner
215 TROPHY CT
WEST SACRAMENTO CA 95605

Owner
218 TROPHY CT
WEST SACRAMENTO CA 95605

Owner
2181 GREENWICH ST
SAN FRANCISCO CA 94123

Owner
2195 DONNER PEAK CT
GOLD RIVER CA 95670

Owner
22 GREEN MEADOW LN
HUNTINGTON NY 11743

Owner
220 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2200 W VALLEY BLVD
ALHAMBRA CA 91803

Owner
2205 RICE AVE
WEST SACRAMENTO CA 95691

Owner
2235 FARADAY AVE STE O
CARLSBAD CA 92008

Owner
2237 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2248 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
225 BRAE BLVD
PARK RIDGE NJ 7656

Owner
225 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2256 MONUMENT BLVD
PLEASANT HILL CA 94523

Owner
2285 DAVIS RD
WEST SACRAMENTO CA 95691

Owner
2286 STONE BLVD
WEST SACRAMENTO CA 95691

Owner
229 BRANNAN ST #10C
SAN FRANCISCO CA 0

Owner
2301 INDIAN CREEK
DIAMOND BAR CA 91765

Owner
2313 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2314 CORK CIRCLE
SACRAMENTO CA 0

Owner
2317 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2320 PARKWAY DR
CRESENT CITY CA 95531

Owner
2321 EVERGREEN AVE
WEST SACRAMENTO CA 95691

Owner
2323 EVERGREEN AVE
WEST SACRAMENTO CA 95691

Owner
2324 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2328 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
2332 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
2333 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2337 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
234 O ST
COLTON CA 92324

Owner
2341 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2345 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2348 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
2349 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2353 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2361 KINSINGTON ST
WEST SACRAMENTO CA 95691

Owner
2385 HIGGINS RD
WEST SACRAMENTO CA 95691

Owner
2390 SAN MARCO ST #1
WEST SACRAMENTO CA 95691

Owner
2390 SAN MARCO ST #2
WEST SACRAMENTO CA 95691

Owner
2390 SAN MARCO ST #3
WEST SACRAMENTO CA 95691

Owner
2390 SAN MARCO ST #4
WEST SACRAMENTO CA 95691

Owner
2390 SAN MARCO ST #5
WEST SACRAMENTO CA 95691

Owner
2390 SAN MARCO ST #6
WEST SACRAMENTO CA 95691

Owner
2398 E SIDE RD
JACKSONVILLE OR 97530

Owner
240 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2411 SELLERS WAY
WEST SACRAMENTO CA 95691

Owner
2412 PENNLAND DR
SACRAMENTO CA 95825

Owner
2416 MANCHESTER ST
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #1
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #2
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #3
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #4
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #5
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #6
WEST SACRAMENTO CA 95691

Owner
2420 SAN MARCO ST #7
WEST SACRAMENTO CA 95691

Owner
2424 DEL MONTE ST
WEST SACRAMENTO CA 95691

Owner
2430 HARMON RD
WEST SACRAMENTO CA 95691

Owner
2434 EVERGREEN AVE
WEST SACRAMENTO CA 95691

Owner
2434 POLVOROSA AVE
SAN LEANDRO CA 94577

Owner
2434 W CAPITAL AVE
WEST SACRAMENTO CA 95691

Owner
2435 FONTANA ST #1
WEST SACRAMENTO CA 95691

Owner
2435 FONTANA ST #2
WEST SACRAMENTO CA 95691

Owner
2435 FONTANA ST #3
WEST SACRAMENTO CA 95691

Owner
2435 FONTANA ST #4
WEST SACRAMENTO CA 95691

Owner
2435 FONTANA ST #5
WEST SACRAMENTO CA 95691

Owner
2435 FONTANA ST #7
WEST SACRAMENTO CA 95691

Owner
2435 SELLERS WAY
WEST SACRAMENTO CA 95691

Owner
2435 SELLERS WAY
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #1
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #2
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #3
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #4
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #5
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #6
WEST SACRAMENTO CA 95691

Owner
2440 FONTANA ST #7
WEST SACRAMENTO CA 95691

Owner
2449 STARLING LN
WEST SACRAMENTO CA 95691

Owner
245 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2450 RICE AVE
WEST SACRAMENTO CA 95691

Owner
2450 SAN MARCO ST #1
WEST SACRAMENTO CA 95691

Owner
2450 SAN MARCO ST #2
WEST SACRAMENTO CA 95691

Owner
2450 SAN MARCO ST #3
WEST SACRAMENTO CA 95691

Owner
2450 SAN MARCO ST #4
WEST SACRAMENTO CA 95691

Owner
2450 SAN MARCO ST #6
WEST SACRAMENTO CA 95691

Owner
2450 SAN MARCO ST #7
WEST SACRAMENTO CA 95691

Owner
2461 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2463 TORINO ST #4
WEST SACRAMENTO CA 95691

Owner
2465 FONTANA ST #1
WEST SACRAMENTO CA 95691

Owner
2465 FONTANA ST #2
WEST SACRAMENTO CA 95691

Owner
2465 FONTANA ST #3
WEST SACRAMENTO CA 95691

Owner
2465 FONTANA ST #6
WEST SACRAMENTO CA 95691

Owner
2465 FONTANA ST #7
WEST SACRAMENTO CA 95691

Owner
2467 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2470 FONTANA ST #1
WEST SACRAMENTO CA 95691

Owner
2470 FONTANA ST #2
WEST SACRAMENTO CA 95691

Owner
2470 FONTANA ST #3
WEST SACRAMENTO CA 95691

Owner
2470 FONTANA ST #4
WEST SACRAMENTO CA 95691

Owner
2470 FONTANA ST #5
WEST SACRAMENTO CA 95691

Owner
2470 FONTANA ST #7
WEST SACRAMENTO CA 95691

Owner
2473 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2479 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2480 SAN MARCO ST #1
WEST SACRAMENTO CA 95691

Owner
2480 SAN MARCO ST #3
WEST SACRAMENTO CA 95691

Owner
2480 SAN MARCO ST #4
WEST SACRAMENTO CA 95691

Owner
2480 SAN MARCO ST #5
WEST SACRAMENTO CA 95691

Owner
2480 SAN MARCO ST #6
WEST SACRAMENTO CA 95691

Owner
2480 SAN MARCO ST #7
WEST SACRAMENTO CA 95691

Owner
2491 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2491 STARLING LN
WEST SACRAMENTO CA 95691

Owner
24960 LA LOMA DR
LOS ALTOS HILLS CA 94022

Owner
2497 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2499 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
25 OLD COACH RD
NAPA CA 94558

Owner
250 W PRATT ST
BALTIMORE MD 21201

Owner
250 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2505 B RICE AVE
WEST SACRAMENTO CA 95691

Owner
2506 ALTURAS CT
WEST SACRAMENTO CA 95691

Owner
2507 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2507 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2513 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2515 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2518 ASPEN VALLEY LN
SACRAMENTO CA 95835

Owner
2519 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2523 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2525 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2525 NATOMAS PARK DR
SACRAMENTO CA 0

Owner
2530 CHERRY LN
WALNUT CREEK CA 94597

Owner
2531 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2531 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2535 BOATMAN AVE
WEST SACRAMENTO CA 95691

Owner
2537 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2539 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2543 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2547 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2549 STARLING LN
WEST SACRAMENTO CA 95691

Owner
255 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2550 S RIVER RD
WEST SACRAMENTO CA 95691

Owner
25521 COMMERCENTRE DR
LAKE FOREST CA 92630

Owner
2555 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
2555 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2561 STARLING LN
WEST SACRAMENTO CA 95691

Owner
2563 ROARING CREEK ST
WEST SACRAMENTO CA 95691

Owner
260 WILLOW AVE
MILLBRAE CA 94030

Owner
260 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2600 5TH ST
SACRAMENTO CA 95818

Owner
2600 FRANKLIN WAY
WEST SACRAMENTO CA 95691

Owner
2600 INDUSTRIAL BLVD
WEST SACRAMENTO CA 95691

Owner
2620 HARMON RD
WEST SACRAMENTO CA 95691

Owner
2640 BABSON DR
ELK GROVE CA 95758

Owner
2641 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
265 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2650 CEDAR SPRINGS RD STE 850
DALLAS TX 75201

Owner
267 CLEARPARK CIR
SAN JOSE CA 95136

Owner
2700 FAIR OAKS BLVD
SACRAMENTO CA 95864

Owner
2701 COTTAGE WAY #15
SACRAMENTO CA 95825

Owner
2701 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
2703 KNOLLWOOD DR
CAMERON PARK CA 95682

Owner
2705 K ST #4
SACRAMENTO CA 95816

Owner
2711 RICE AVE
WEST SACRAMENTO CA 95691

Owner
27210 S LAMMERS RD
TRACY CA 95377

Owner
27369 EAGLE VIEW CT
EL MACERO CA 95616

Owner
2741 RICE AVE
WEST SACRAMENTO CA 95691

Owner
2751 RICE AVE
WEST SACRAMENTO CA 95691

Owner
2785 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
279 WESTLAKE DR
WEST SACRAMENTO CA 95605

Owner
2795 E COTTONWOOD PKWY #400
SALT LAKE CITY UT 84121

Owner
28 ACACIA AVE
KENTFIELD CA 94904

Owner
280 WOODHAVEN PL
WEST SACRAMENTO CA 95605

Owner
2800 AZALEA RD
SACRAMENTO CA 95864

Owner
2800 E LAKE ST LAKE0012
MINNEAPOLIS MN 55406

Owner
2801 EVERGREEN AVE
WEST SACRAMENTO CA 95691

Owner
28085 MACE BLVD
DAVIS CA 95618

Owner
2815 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2820 SUMMIT DR
BURLINGAME CA 94010

Owner
2825 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
283 WESTLAKE DR
WEST SACRAMENTO CA 95605

Owner
2830 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
284 SUMATRA DR
SACRAMENTO CA 95838

Owner
2840 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2848 SUMMERFIELD DR
WEST SACRAMENTO CA 95691

Owner
287 WESTLAKE DR
WEST SACRAMENTO CA 95605

Owner
2880 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2893 SUNRISE BLVD #106
RANCHO CORDOVA CA 95742

Owner
29 POINT REYES WAY
PACIFICA CA 94044

Owner
2900 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2901 DULUTH ST
WEST SACRAMENTO CA 95691

Owner
2905 HART AVE
WEST SACRAMENTO CA 95691

Owner
2910 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
2920 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2925 CARRADALE DR
ROSEVILLE CA 95661

Owner
2945 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2950 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2951 27TH ST
SACRAMENTO CA 95818

Owner
2955 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2970 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2980 IRONWOOD WAY
WEST SACRAMENTO CA 95691

Owner
2980 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
2985 BRIAR KNOLL DR
LOS ANGELES CA 90046

Owner
2985 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
300 INTERPACE PARKWAY
PARSIPPANY NJ 7054

Owner
3000 DORLAINE CT
SACRAMENTO CA 95821

Owner
3000 DULUTH ST
WEST SACRAMENTO CA 95691

Owner
3006 LA RUE WAY
RANCHO CORDOVA CA 95670

Owner
301 DELANO ST
ELVERTA CA 95626

Owner
301 WEBSTER ST
WEST SACRAMENTO CA 95691

Owner
3020 DULUTH ST #5
WEST SACRAMENTO CA 95691

Owner
3025 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3030 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3031 BEACON BLVD
WEST SACRAMENTO CA 95691

Owner
3031 SPRUCE WAY
WEST SACRAMENTO CA 95691

Owner
3038 NANCY LN
WEST SACRAMENTO CA 95691

Owner
3050 ALLAN AVE
WEST SACRAMENTO CA 95691

Owner
3050 INDUSTRIAL BLVD
WEST SACRAMENTO CA 95691

Owner
3060 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3075 BEACON BLVD
WEST SACRAMENTO CA 95691

Owner
3080 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3095 BEACON BLVD
WEST SACRAMENTO CA 95691

Owner
31 15TH ST
WEST SACRAMENTO CA 95691

Owner
31 RULLA RD
SISTERS CREEK TASMANIA 0

Owner
3100 BEACON BLVD
WEST SACRAMENTO CA 95691

Owner
3100 DULUTH ST
WEST SACRAMENTO CA 95691

Owner
31010 SAN ANTONIO ST
HAYWARD CA 94544

Owner
3105 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3112 ALDER WAY
WEST SACRAMENTO CA 95691

Owner
3120 FREEBOARD DR STE 201
WEST SACRAMENTO CA 95691

Owner
3125 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3131 S VAUGHN WAY STE 301
AURORA CO 80014

Owner
3135 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3140 BEACON BLVD
WEST SACRAMENTO CA 95691

Owner
3154 CASTLEWOOD CIR
POLLOCK PINES CA 95726

Owner
3155 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3175 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3185 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3185 LONGVIEW DR
SACRAMENTO CA 95821

Owner
3190 CLEARVIEW WAY #200
SAN MATEO CA 94402

Owner
3190 CLEARVIEW WAY #200
SAN MATEO CA 94402

Owner
3198 ALLAN AVE
WEST SACRAMENTO CA 95605

Owner
3206 SWEET MAPLE WAY
SACRAMENTO CA 95833

Owner
321 TWIN LAKES DR
SANTA ROSA CA 95409

Owner
3211 FREEPORT BLVD
SACRAMENTO CA 95818

Owner
3211 FREEPORT BLVD
SACRAMENTO CA 95818

Owner
3216 SAGEWOOD CT
SACRAMENTO CA 95827

Owner
3220 JEFFERSON BLVD
WEST SACRAMENTO CA 0

Owner
3230 PUERTO RICO RD
WEST SACRAMENTO CA 95691

Owner
3231 EVERGREEN AVE
WEST SACRAMENTO CA 95691

Owner
3245 ALLEN AVE
WEST SACRAMENTO CA 95691

Owner
3255 W MARCH LN #400
STOCKTON CA 95219

Owner
3255 W MARCH LN 4TH FLOOR
STOCKTON CA 95219

Owner
3255 W MARCH LN 4TH FLOOR
STOCKTON CA 95219

Owner
3255 W MARCH LN 4TH FLOOR
STOCKTON CA 95219

Owner
3255 W MARCH LN 4TH FLOOR
STOCKTON CA 95219

Owner
3255 W MARCH LN 4TH FLOOR
STOCKTON CA 95219

Owner
3255 W MARCH LN 4TH FLOOR
STOCKTON CA 95219

Owner
3290 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3295 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3300 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
33049 CALISTOGA ST
UNION CITY CA 94583

Owner
3305 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3308 EL CAMINO AVE #300-423
SACRAMENTO, CA 95821

Owner
3319 WEST CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
3330 FOLSOM BLVD
SACRAMENTO CA 95816

Owner
3335 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3335 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3336 BORDEAUX DR
EL DORADO HILLS CA 95762

Owner
3340 FRENCH AVE
WEST SACRAMENTO CA 95691

Owner
3341 NEW ISLAND ST
WEST SACRAMENTO CA 95691

Owner
3341 NEW ISLAND ST
WEST SACRAMENTO CA 95691

Owner
3345 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3352 MEDALLION CT
PLEASANTON CA 94588

Owner
3353 BRADSHAW RD STE 108
SACRAMENTO CA 95827

Owner
3363 STOPE DR
PLACERVILLE CA 95667

Owner
3365 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3380 CENTRAL EXPRESSWAY
SANTA CLARA CA 95051

Owner
3385 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
340 E MAIN ST STE 1800
SPARTANBURG SC 29302

Owner
3400 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3400 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
3404 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3405 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3408 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
341 MILLS DR
DAVIS CA 95616

Owner
3412 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3416 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3420 KINGMONT
LOOMIS CA 0

Owner
3420 KINGMONT DR
LOOMIS CA 0

Owner
3420 PALOMAR AVE
WEST SACRAMENTO CA 0

Owner
3428 ETTIE ST
OAKLAND CA 94608

Owner
3450 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3455 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3476 STATEVIEW BLVD
FT MILL SC 29715

Owner
3477 FOXMORE LN
RESCUE CA 95672

Owner
3480 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3485 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3496 TIMBER WOLF CIR
WELLINGTON CO 80549

Owner
3500 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3500 REED AVE
WEST SACRAMENTO CA 95691

Owner
3500 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
3504 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3508 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3512 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3512 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
3515 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3520 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3524 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3525 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3528 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3530 PENDLETON WAY
LAND O'LAKES FL 34639

Owner
3540 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3550 ANTIOCH AVE
WEST SACRAMENTO CA 95691

Owner
3555 ROCKY HILL CT
LOOMIS CA 95650

Owner
3560 LOGGERHEAD WAY
SACRAMENTO CA 95834

Owner
3580 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3580 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
36 MAIN STREET
TIBURON CA 94920

Owner
3600 AUBURN-FOLSOM RD
LOOMIS CA 95650

Owner
3600 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3604 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3608 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3612 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3616 PALOMAR AVE
WEST SACRAMENTO CA 95691

Owner
3633 BRIDGEWAY LAKES DR
WEST SACRAMENTO CA 95691

Owner
364 E 2ND ST
BENICIA CA 94510

Owner
3650 SEAPORT BLVD
WEST SACRAMENTO CA 95691

Owner
3652 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3676 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
37 W YOKUTS STE A-3
STOCKTON CA 95207

Owner
370 MAPLE ST
WEST SACRAMENTO CA 95691

Owner
3740 COMMERCE DR
WEST SACRAMENTO CA 95691

Owner
375 COUNTY LINE RD
MONUMENT CO 80132

Owner
3755 BALBOA ST #203
SAN FRANCISCO CA 94121

Owner
3770 CASTAIC CT
WEST SACRAMENTO CA 95691

Owner
3777 EL CENTRO BLVD
NICOLAUS CA 95659

Owner
3780 GRAHAM ISLAND RD
WEST SACRAMENTO CA 95691

Owner
3790 SILVERWOOD RD
WEST SACRAMENTO CA 95691

Owner
38 EATON CT
WOODLAND CA 95776

Owner
3800 W CAPITAL AVE
WEST SACRAMENTO CA 95691

Owner
3800 W CHAPMAN AVE
ORANGE CA 92868

Owner
3801 AIRPORT WAY SOUTH
SEATTLE WA 98124

Owner
3801 WEST PACIFIC AVE #A
SACRAMENTO CA 95820

Owner
3815 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3820 CHERRY PL
WEST SACRAMENTO CA 95691

Owner
3825 BIG BEAR ST
WEST SACRAMENTO CA 95691

Owner
3825 THORNWOOD DR
SACRAMENTO CA 95821

Owner
3826 ARROYO AVE
DAVIS CA 95616

Owner
383 GIKAS LN
TURLOCK CA 95382

Owner
3845 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3851 CHERRY PL
WEST SACRAMENTO CA 95691

Owner
3880 FOURTEEN MILE DR
STOCKTON CA 95219

Owner
3900 COMMERCE DR
WEST SACRAMENTO CA 95691

Owner
3911 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
392 E GISH RD
SAN JOSE CA 95112

Owner
3934 ARGONAUT AVE
ROCKLIN CA 95677

Owner
3956 TULE ST
WEST SACRAMENTO CA 95691

Owner
3965 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
3969 INDUSTRIAL BLVD
WEST SACRAMENTO CA 95691

Owner
39718 BARRY RD
DAVIS CA 95616

Owner
3990 INDUSTRIAL BLVD
WEST SACRAMENTO CA 95691

Owner
3990 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
4 BEECH AVE HAZEL GROVE
STOCKPORT CHESHIRE SK7 4QP 0

Owner
4 MAIN DR
SAN RAFAEL CA 94901

Owner
400 10TH ST
WEST SACRAMENTO CA 95691

Owner
400 BALL PARK DR
WEST SACRAMENTO CA 0

Owner
400 CONTINENTAL BLVD STE 160
EL SEGUNDO CA 90245

Owner
400 WASHINGTON AVE
WEST SACRAMENTO CA 95691

Owner
4009 VIA GAVILAN
PALOS VERDES ESTATES CA 90274

Owner
401 DEREK PL
ROSEVILLE CA 95678

Owner
401 KIRKLAND PARK PL STE 500
KIRKLAND WA 98033

Owner
401 MAIN ST
ROSEVILLE CA 95678

Owner
401 S CENTRAL AVE
LOS ANGELES CA 90013

Owner
4010 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
4021 PAULINE CIR
LOOMIS CA 95650

Owner
4021 PORT CHICAGO HWY
CONCORD CA 94520

Owner
4021 PORT CHICAGO HWY
CONCORD CA 94520

Owner
4033 MARIANNE DR
LAFAYETTE CA 94549

Owner
4033 NW YEON AVE
PORTLAND OR 97210

Owner
404 PASEO DEL MAR
PALOS VERDES ESTATES CA 90274

Owner
404 TODHUNTER AVE
WEST SACRAMENTO CA 95605

Owner
4061 SEAPORT BLVD
WEST SACRAMENTO CA 95691

Owner
407 HARBOR BLVD
WEST SACRAMENTO CA 95691

Owner
408 TODHUNTER AVE
WEST SACRAMENTO CA 95605

Owner
4080 SEAPORT BLVD
WEST SACRAMENTO CA 95691

Owner
409 JASMINE AVE
WEST SACRAMENTO CA 95605

Owner
4115 MCKINLEY BLVD
SACRAMENTO CA 95819

Owner
412 JASMINE AVE
WEST SACRAMENTO CA 95605

Owner
4133 MCKINLEY BLVD
SACRAMENTO CA 95819

Owner
416 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
416 TODHUNTER AVE
WEST SACRAMENTO CA 95605

Owner
417 WESTACRE RD #48
WEST SACRAMENTO CA 95691

Owner
418 JEFFERSON ST
OAKLAND CA 94607

Owner
420 JASMINE AVE
WEST SACRAMENTO CA 95605

Owner
4200 N MILLER RD #504
SCOTTSDALE AZ 85251

Owner
4201 GARDEN HWY
SACRAMENTO CA 95834

Owner
421 JASMINE AVE
WEST SACRAMENTO CA 95691

Owner
421 PICCADILLY PL #5
SAN BRUNO CA 94066

Owner
423 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
424 TODHUNTER AVE
WEST SACRAMENTO CA 95605

Owner
4242 ALVERTVILLE WAY
ANTELOPE CA 95843

Owner
425 E OLIVE AVE
SUNNYVALE CA 94086

Owner
425 E OLIVE AVE
SUNNYVALE CA 94086

Owner
425 JASMINE AVE
WEST SACRAMENTO CA 95605

Owner
425 S HACIENDA BLVD
CITY OF INDUSTRY CA 91745

Owner
428 TODHUNTER AVE
WEST SACRAMENTO CA 95605

Owner
429 JASMINE AVE
WEST SACRAMENTO CA 95605

Owner
430 E STATE ST STE 100
EAGLE ID 83616

Owner
432 TODHUNTER AVE
WEST SACRAMENTO CA 95605

Owner
44126 N EL MACERO DR
EL MACERO CA 95618

Owner
445 WALNUT ST
WOODLAND CA 95695

Owner
44607 COUNTRY CLUB DR
EL MACERO CA 95618

Owner
4475 PLANTATION DR
FAIR OAKS CA 95628

Owner
4479 PARK BRISTOL PL
SAN JOSE CA 95136

Owner
4490 WINDCLOUD AVE
SACRAMENTO CA 95838

Owner
4515 AUBURN BLVD
SACRAMENTO CA 95841

Owner
4555 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
4574 RIVER ROCK HILL RD
PLEASANTON CA 94588

Owner
4582 S ULSTER ST #1700
DENVER CO 80237

Owner
459 MEADOW VIEW DR
VACAVILLE CA 95688

Owner
460 MINER RD
ORINDA CA 94563

Owner
4601 GATWICK WAY
ROCKLIN CA 95677

Owner
4623 AMERICAN RIVER DR
SACRAMENTO CA 95864

Owner
4630 WESTAMERICA DR STE A
FAIRFIELD CA 94534

Owner
466 FAIRWAY DR
NOVATO CA 94949

Owner
4701 SISK RD STE #101
MODESTO CA 95356

Owner
4725 NORELLE ST
LOS ANGELES CA 90032

Owner
4828 LOOP CENTRAL DR
HOUSTON TX 77081

Owner
4849 SCOTIA ST
UNION CITY CA 94587

Owner
4880 SANTA ROSA RD
CAMARILLO CA 93012

Owner
4910 EDEN CT
CARMICHAEL CA 95608

Owner
4918 SALIDA BLVD
SALIDA CA 95368

Owner
4941 KOTO RD
PLACERVILLE CA 95667

Owner
49415 WILLOW POINT RD
CLARKSBURG CA 95612

Owner
4965 JOULE ST
RENO NV 89502

Owner
4995 JEFFERSON BLVD
WEST SACRAMENTO CA 95605

Owner
5 WOODGATE CT
HILLSBOROUGH CA 94010

Owner
500 OLD DOMINION WAY
THOMASVILLE NC 27360

Owner
5009 FELICIA WAY
ELK GROVE CA 95758

Owner
5010 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
504 GLIDE AVE SP 37
WEST SACRAMENTO CA 95691

Owner
504 GLIDE AVE SP 40
WEST SACRAMENTO CA 95691

Owner
505 CITY PARKWEST #100
ORANGE CA 92868

Owner
506 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
507 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
508 S BREVARD AVE UNIT 836
COCOA BEACH FL 32931

Owner
509 MICHIGAN BLVD
WEST SACRAMENTO CA 95691

Owner
510 WILHAGGIN DR
SACRAMENTO CA 95864

Owner
5101 FLORIN-PARKINS RD
SACRAMENTO CA 95826

Owner
5116 PRIOR RIDGE RD
GRANITE BAY CA 95742

Owner
5116 PRIOR RIDGE RD
GRANITE BAY CA 95742

Owner
517 FOXFORD GLEN CT
ROSEVILLE CA 95747

Owner
5175 RIDGEVINE WAY
FAIR OAKS CA 95628

Owner
5181 WINDING WAY
VACAVILLE CA 95688

Owner
520 HARBOR BLVD
WEST SACRAMENTO CA 95691

Owner
5229 COPPER RIDGE WAY
ANTELOPE CA 95843

Owner
524 HAUTH LN
WALNUT CREEK CA 94597

Owner
5241 ARNOLD AVE
MCCLELLAN CA 95652

Owner
525 PINE WAY
ANAHEIM CA 92805

Owner
5276 NORTH VAN NESS BLVD
FRESNO CA 93711

Owner
528-A GALVESTON ST
WEST SACRAMENTO CA 95691

Owner
529 WATER ST
WEST SACRAMENTO CA 95605

Owner
532 HOUSTON ST
WEST SACRAMENTO CA 95691

Owner
533 GALVESTON ST
WEST SACRAMENTO CA 95691

Owner
5333 E LEVEE RD
SACRAMENTO CA 95835

Owner
53571 SOUTH RIVER RD
CLARKSBURG CA 95612

Owner
536-A HOUSTON ST
WEST SACRAMENTO CA 95691

Owner
5410 NAVE DR #4
NOVATO CA 94949

Owner
5411 HALAS CT
ELK GROVE CA 95757

Owner
5419 MT ANGELES RD
PORT ANGELES WA 98362

Owner
545 RIDGEWOOD CT
VACAVILLE CA 95688

Owner
550 DREVER ST
WEST SACRAMENTO CA 95691

Owner
5505 S NOGALES HWY
TUSCON AZ 85706

Owner
551 SUTTER ST
WEST SACRAMENTO CA 95691

Owner
5524 KOHLER AVE
SACRAMENTO CA 95841

Owner
5524 KOHLER AVE
SACRAMENTO CA 95841

Owner
555 LEWELLING BLVD
SAN LEANDRO CA 94579

Owner
5601 STATE AVE
SACRAMENTO CA 95819

Owner
5621 MARDEN ST
DAVIS CA 95616

Owner
5624 TEGAN RD
ELK GROVE CA 95758

Owner
5630 STONY CREEK WAY
MARYSVILLE CA 95901

Owner
5634 GUTHRIE PL
DAVIS CA 95616

Owner
5642 DELCLIFF CIR
SACRAMENTO CA 95822

Owner
5665 POWER INN RD
SACRAMENTO CA 95824

Owner
576 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
5809 153RD PL
S W EDMONDS WA 98026

Owner
5909 PRETTY BUSH CT
CITRUS HEIGHTS CA 95621

Owner
5920 24TH ST
RIO LINDA CA 95673

Owner
5921 WHALERS COVE CT
ELK GROVE CA 95758

Owner
5939 MONTEREY RD
LOS ANGELES CA 0

Owner
5940 SARAH CT
CARMICHAEL CA 95608

Owner
600 GILLAM RD
WILMINGTON OH 0

Owner
601 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
605 CORDILLERA CT
FOLSOM CA 95630

Owner
608 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
610 HARBOR BLVD
WEST SACRAMENTO CA 95691

Owner
6105 OAKBRIDGE DR
GRANITE BAY CA 95746

Owner
6118 ALCOA AVE
LOS ANGELES CA 90058

Owner
617 RIVER LAKE WAY
SACRAMENTO CA 95831

Owner
620 GLIDE AVE
WEST SACRAMENTO CA 95691

Owner
620 SUTTER ST
WEST SACRAMENTO CA 95691

Owner
6201 VENTURA ST
SACRAMENTO CA 95822

Owner
625 COURT ST RM 203
WOODLAND CA 95695

Owner
629 N 16TH ST
SACRAMENTO CA 95814

Owner
6320 RIO BLANCO DR
RANCHO MURRIETA CA 95683

Owner
642 4TH AVE
SACRAMENTO CA 95818

Owner
6440 HAVENSIDE DR
SACRAMENTO CA 95831

Owner
6449 DRIFTWOOD ST
SACRAMENTO CA 95831

Owner
6491 ST ANDREWS DR
STOCKTON CA 95219

Owner
650 CALIFORNIA ST/FL 26/2920
SAN FRANCISCO CA 94108

Owner
6500 MI CT
CITRUS HEIGHTS CA 95610

Owner
658 SPRINGFIELD CIR
ROSEVILLE CA 95678

Owner
659 ALGUIRE PKWAY
HAYWARD CA 94544

Owner
660 COMMERCE DR STE A
ROSEVILLE CA 95678

Owner
660 HARBOR BLVD
WEST SACRAMENTO CA 95691

Owner
6601 SUMMERVIEW CT
ORANGE VA 22960

Owner
6619 CAMINO DEL LAGO
RANCHO MURIETA CA 95683

Owner
6624 51ST ST
SACRAMENTO CA 95823

Owner
6637 CHERRY LN
RIO LINDA CA 95673

Owner
6669 ALDER PARK CIR
ROSEVILLE CA 95678

Owner
670 SOTANO DR
SACRAMENTO CA 95833

Owner
6705 ROCKLEDGE DR, STE 900
BETHESDA MD 20817

Owner
6782 STARBOARD WAY
SACRAMENTO CA 95831

Owner
682 OLD JONAS HILL RD
LAFAYETTE CA 94549

Owner
6900 BEATRICE DR
KALAMAZOO MI 49009

Owner
7 CORPORATE DR
KEENE NH 3431

Owner
701 EAST LARSON AVE
CHICO CA 95973

Owner
705 HARBOR POINTE PL
WEST SACRAMENTO CA 95691

Owner
705 REED ST
SANTA CLARA CA 95050

Owner
709 CLIPPER WAY
SACRAMENTO CA 95831

Owner
709 CLIPPER WAY
SACRAMENTO CA 95831

Owner
7120 YORKTOWN DR
GILROY CA 95020

Owner
713 GALVESTON ST
WEST SACRAMENTO CA 95695

Owner
715 GLIDE AVE #3
WEST SACRAMENTO CA 95691

Owner
715 GLIDE AVE #68
WEST SACRAMENTO CA 95691

Owner
715 GLIDE AVE SP 67
WEST SACRAMENTO CA 95691

Owner
716 HOUSTON ST
WEST SACRAMENTO CA 95691

Owner
717 AIRPORT BLVD
SAN FRANCISCO CA 94080

Owner
7171 N PERSHING AVE
STOCKTON CA 95207

Owner
7255 BAYMEADOWS WAY
JACKSONVILLE FL 32256

Owner
727 VALENCIA ST
SAN FRANCISCO CA 94110

Owner
731 POPLAR AVE
WEST SACRAMENTO CA 95691

Owner
7317 L'ARBRE WAY
SACRAMENTO CA 95831

Owner
733 WATER ST
WEST SACRAMENTO CA 95605

Owner
7339 WINDBRIDGE DR
SACRAMENTO CA 95831

Owner
7426 EAST PARKWAY
SACRAMENTO CA 95823

Owner
7432 MYRTLE VISTA AVE
SACRAMENTO CA 95831

Owner
745 SAN CARLOS AVE
MOUNTAIN VIEW CA 94043

Owner
751 DOUGLAS ST
WEST SACRAMENTO CA 95605

Owner
752 ELM ST
WEST SACRAMENTO CA 95605

Owner
7525 MONTE BRAZIL DR
SACRAMENTO CA 95831

Owner
755 RIVERPOINT DR STE #200
WEST SACRAMENTO CA 0

Owner
7604 E MULLER ST
DOWNEY CA 90241

Owner
7688 EL DOURO DR
SACRAMENTO CA 95831

Owner
7700 COLLEGE TOWN DR #201
SACRAMENTO CA 95826

Owner
7700 S OAK WAY
SACRAMENTO CA 95831

Owner
7800 LAZY TRAIL CT
ORANGEVALE CA 95662

Owner
791 PARK OF COMMERCE DR
BOCA RATON FL 33487

Owner
7955 MORNINGSIDE DR
GRANITE BAY CA 95746

Owner
8 17TH ST
WEST SACRAMENTO CA 95691

Owner
80 IRON POINT CIR STE 100
FOLSOM CA 95630

Owner
800 RUSSELL RD
COURTLAND CA 95615

Owner
801 E ST
WEST SACRAMENTO CA 95605

Owner
801 NORTHPORT DR
WEST SACRAMENTO CA 0

Owner
8041 TETOTOM PARK WAY
ANTELOPE CA 95843

Owner
816 BLAIR AVE
PIEDMONT CA 94611

Owner
817 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
817 W COVE WAY
SACRAMENTO CA 95831

Owner
819 S 9TH ST
MODESTO CA 95351

Owner
82 STARGLOW CIR
SACRAMENTO CA 95831

Owner
824 INGLEWOOD DR
WEST SACRAMENTO CA 95605

Owner
826 WEST CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
830 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
831 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
832 MONTE ROSA LN
MANTECA CA 95337

Owner
832 OAK ST
WEST SACRAMENTO CA 95605

Owner
8328 WOODBOROUGH WAY
FAIR OAKS CA 95628

Owner
833 WATER ST
WEST SACRAMENTO CA 95605

Owner
835 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
837 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
8395 JACKSON RD STE F
SACRAMENTO CA 95826

Owner
840 HARBOR BLVD
WEST SACRAMENTO CA 95691

Owner
8434 ANCHO WAY
ELVERTA CA 95626

Owner
848 OAK ST
WEST SACRAMENTO CA 95605

Owner
8508 ANNETTE ENGEL WAY
FAIR OAKS CA 95628

Owner
8521 LE PARC CT
FAIR OAKS CA 95628

Owner
8535 E FLORENCE AVE STE 100
DOWNEY CA 90240

Owner
854 LAKE FRONT DR
SACRAMENTO CA 95831

Owner
8591 GERBER RD
SACRAMENTO CA 95828

Owner
861 42ND ST
SACRAMENTO CA 95819

Owner
861 42ND ST
SACRAMENTO CA 95819

Owner
8615 ELDER CREEK RD STE 200
SACRAMENTO CA 95828

Owner
8622 BANFF VISTA DR
ELK GROVE CA 95624

Owner
866 EMBARCADERO DR
WEST SACRAMENTO CA 95605

Owner
8663 CREEKWOOD WAY
FAIR OAKS CA 95628

Owner
8700 TECHNOLOGY WAY
RENO NV 89521

Owner
874 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
8744 BLUFF LN
FAIR OAKS CA 95628

Owner
875 PATROL RD
WOODSIDE CA 94062

Owner
8761 ELK GROVE BLVD
ELK GROVE CA 95624

Owner
8775 FOLSOM BLVD STE 200
SACRAMENTO CA 95826

Owner
879 F STREET STE 120
WEST SACRAMENTO CA 95605

Owner
880 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
8848 GARDEN GLEN WAY
SACRAMENTO CA 95826

Owner
8870 CAMPTON GLEN PL
ELK GROVE CA 95624

Owner
890 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
8941 BOND RD
ELK GROVE CA 95624

Owner
898 SHORE BREEZE DR
SACRAMENTO CA 95831

Owner
900 HILLVIEW DR
DIXON CA 95620

Owner
900 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
9009 RAILROAD AVE
OAKLAND CA 94603

Owner
901 MARINERS ISL BLVD STE 7
SAN MATEO CA 94404

Owner
902 CLINT MOORE RD STE 220
BOCA RATON FL 33487

Owner
902 S BASCOM AVE
SAN JOSE CA 95128

Owner
905 DREVER ST
WEST SACRAMENTO CA 95691

Owner
910 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
910 SOULE ST
WEST SACRAMENTO CA 95691

Owner
918 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
92 6TH ST
WEST SACRAMENTO CA 95691

Owner
920 DREVER ST
WEST SACRAMENTO CA 95691

Owner
920 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
920 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
9229 DAYLOR ST
ELK GROVE CA 95758

Owner
9255 N VIRGINIA ST
RENO NV 0

Owner
9271 LOUIS ST
ELK GROVE CA 95624

Owner
929 STILLWATER RD
WEST SACRAMENTO CA 95605

Owner
929 SUTTER ST
FOLSOM CA 95630

Owner
930 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
930 WESTACRE RD
WEST SACRAMENTO CA 95691

Owner
937 SIMON TERRACE
WEST SACRAMENTO CA 95605

Owner
9370 W STOCKTON BLVD #100
ELK GROVE CA 95758

Owner
940 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
945 COAL CT
SPARKS NV 89434

Owner
9460 W CHILES RD
DAVIS CA 95618

Owner
948 OAK ST
WEST SACRAMENTO CA 95605

Owner
950 RIVER CREST DR
WEST SACRAMENTO 95605

Owner
9534 FLORIN RD
SACRAMENTO CA 95829

Owner
955 LIGHTHOUSE DR
WEST SACRAMENTO CA 95605

Owner
958 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
960 GREEN STAR WAY
SACRAMENTO CA 95831

Owner
964 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
970 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
970 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
971 F ST
WEST SACRAMENTO CA 95605

Owner
980 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
980 ROSEWOOD DR
SAN MATEO CA 94401

Owner
9819 VILLA FRANCISCO LN
GRANITE BAY CA 95746

Owner
9849 WEXFORD CIR
GRANITE BAY CA 0

Owner
985 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
99 SOUTH HILL DR
BRISBANE CA 0

Owner
995 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
996-B FLORIN RD
SACRAMENTO CA 95831

Owner
ONE POST ST 34TH FL
SAN FRANCISCO CA 94104

Owner
P O BOX 025719
MIAMI FL 0

Owner
P O BOX 06019
CHICAGO IL 0

Owner
P O BOX 1003
CITRUS HEIGHTS CA 0

Owner
P O BOX 1024
WEST SACRAMENTO CA 95691

Owner
P O BOX 1026
W SACRAMENTO CA 95691

Owner
P O BOX 1029
DUBLIN PA 0

Owner
P O BOX 1035
CLACKAMAS OR 97015

Owner
P O BOX 112436
CAMPBELL CA 0

Owner
P O BOX 1137
WEST SACRAMENTO CA 95691

Owner
P O BOX 1166
WEST SACRAMENTO CA 95691

Owner
P O BOX 117508
CARROLTON TX 75011

Owner
P O BOX 1186
EAGLE POINT OR 97524

Owner
P O BOX 1207
STOCKTON CA 95201

Owner
P O BOX 1216
RICHMOND VA 23218

Owner
P O BOX 1232
WEST SACRAMENTO CA 95691

Owner
P O BOX 1234
WEST SACRAMENTO CA 95691

Owner
P O BOX 1247
WEST SACRAMENTO CA 95691

Owner
P O BOX 1324
WEST SACRAMENTO CA 95691

Owner
P O BOX 14932
PORTLAND OR 97293

Owner
P O BOX 14932
PORTLAND OR 97293

Owner
P O BOX 1500
HOUSTON TX 77251

Owner
P O BOX 1501
WEST SACRAMENTO CA 95605

Owner
P O BOX 15015
LOS ANGELES CA 90015

Owner
P O BOX 1504
WEST SACRAMENTO CA 95691

Owner
P O BOX 15223
SACRAMENTO CA 95851

Owner
P O BOX 15618
SACRAMENTO CA 95852

Owner
P O BOX 158
WEST SACRAMENTO CA 95691

Owner
P O BOX 161551
SACRAMENTO CA 95816

Owner
P O BOX 162223
SACRAMENTO CA 95816

Owner
P O BOX 163417
SACRAMENTO CA 95816

Owner
P O BOX 1660
WEST SACRAMENTO CA 95691

Owner
P O BOX 16601
DENVER CO 80216

Owner
P O BOX 166289
IRVING TX 0

Owner
P O BOX 167928
IRVING TX 0

Owner
P O BOX 175
WEST SACRAMENTO CA 95691

Owner
P O BOX 176
WEST SACRAMENTO CA 95691

Owner
P O BOX 1835
WEST SACRAMENTO CA 95691

Owner
P O BOX 1900
WEST SACRAMENTO CA 95691

Owner
P O BOX 20389
RALEIGH NC 27619

Owner
P O BOX 2118
MEMPHIS TN 38101

Owner
P O BOX 2184
WEST SACRAMENTO CA 95691

Owner
P O BOX 221174
SACRAMENTO CA 0

Owner
P O BOX 22970
SACRAMENTO CA 95822

Owner
P O BOX 230
WILTON CA 95693

Owner
P O BOX 239
WEST SACRAMENTO CA 95691

Owner
P O BOX 24065
SEATTLE WA 98124

Owner
P O BOX 2450
WEST SACRAMENTO CA 95691

Owner
P O BOX 25025
GLENDALE CA 91201

Owner
P O BOX 255525
SACRAMENTO CA 95825

Owner
P O BOX 2637
FRESNO CA 93745

Owner
P O BOX 2676
GRASS VALLEY CA 95945

Owner
P O BOX 2708
PORTLAND OR 0

Owner
P O BOX 271
WELMINGTON OH 45177

Owner
P O BOX 285
HOUSTON TX 77001

Owner
P O BOX 28606
ATLANTA GA 0

Owner
P O BOX 29046
PHOENIX AZ 85038

Owner
P O BOX 2959
TORRANCE CA 90509

Owner
P O BOX 3191
MODESTO CA 95353

Owner
P O BOX 320099
ALEXANDRIA VA 22320

Owner
P O BOX 327
WEST SACRAMENTO CA 95691

Owner
P O BOX 3272
AUBURN CA 95604

Owner
P O BOX 33
SANCARLOS SONORA MEXICO 85506

Owner
P O BOX 3408
SANTA FE SPRINGS CA 90670

Owner
P O BOX 34854
SACRAMENTO CA 95834

Owner
P O BOX 35370
LOUISVILLE KY 0

Owner
P O BOX 37
WEST SACRAMENTO CA 95691

Owner
P O BOX 401
WEST SACRAMENTO CA 95691

Owner
P O BOX 403
WEST SACRAMENTO CA 95691

Owner
P O BOX 417262
SACRAMENTO CA 95841

Owner
P O BOX 4369
HOUSTON TX 0

Owner
P O BOX 4369
HOUSTON TX 77210

Owner
P O BOX 44
BRODERICK CA 95605

Owner
P O BOX 442
WEST SACRAMENTO CA 95691

Owner
P O BOX 447
WEST SACRAMENTO CA 95691

Owner
P O BOX 456
ROSEVILLE CA 0

Owner
P O BOX 467
WEST SACRAMENTO CA 0

Owner
P O BOX 471
AKRON OH 44309

Owner
P O BOX 48
FORT SMITH AR 72902

Owner
P O BOX 4900
SCOTTSDALE AZ 0

Owner
P O BOX 491
SAN QUINTIN VILLAGE CA 94964

Owner
P O BOX 5015
BUENA PARK CA 90623

Owner
P O BOX 552
WEST SACRAMENTO CA 0

Owner
P O BOX 563
READING PA 19603

Owner
P O BOX 565048
DALLAS TX 0

Owner
P O BOX 576
WEST SACRAMENTO CA 95691

Owner
P O BOX 5787
STATELINE NV 0

Owner
P O BOX 580793
ELK GROVE CA 95758

Owner
P O BOX 611030
SAN JOSE CA 0

Owner
P O BOX 631
BODEGA BAY CA 94923

Owner
P O BOX 638
WEST SACRAMENTO CA 95691

Owner
P O BOX 65
RIO OSO CA 95674

Owner
P O BOX 667
PRINEVILLE OR 97754

Owner
P O BOX 673
WEST SACRAMENTO CA 95691

Owner
P O BOX 678
WEST SACRAMENTO CA 95691

Owner
P O BOX 711
WEST SACRAMENTO CA 95691

Owner
P O BOX 715
WEST SACRAMENTO CA 95691

Owner
P O BOX 717
WEST SACRAMENTO CA 95691

Owner
P O BOX 735
WEST SACRAMENTO CA 95691

Owner
P O BOX 773
HINES OR 97738

Owner
P O BOX 776
WEST SACRAMENTO CA 95691

Owner
P O BOX 780
DEERFIELD IL 0

Owner
P O BOX 793
REPRESA CA 95671

Owner
P O BOX 800
WEST SACRAMENTO CA 95691

Owner
P O BOX 8000
CITRUS HEIGHTS CA 95621

Owner
P O BOX 807
WEST SACRAMENTO CA 95691

Owner
P O BOX 832
WEST SACRAMENTO CA 95691

Owner
P O BOX 84
ROSS CA 94957

Owner
P O BOX 852
WEST SACRAMENTO CA 95691

Owner
P O BOX 872
WEST SACRAMENTO CA 95691

Owner
P O BOX 874
WEST SACRAMENTO CA 95691

Owner
P O BOX 9
WESTLEY CA 95387

Owner
P O BOX 907
MIRA LOMA CA 91752

Owner
P O BOX 911
MARYSVILLE CA 95901

Owner
P O BOX 933
WEST SACRAMENTO CA 0

Owner
P O BOX 934
WEST SACRAMENTO CA 0

Owner
P O BOX 947
SAN JOSE CA 95108

Owner
P O BOX 968
THAYNE WY 83127

Owner
P O BOX 9777
FEDERAL WAY WA 0

Owner
P O BOX 980031
WEST SACRAMENTO CA 95798

Owner
P O BOX 980160
WEST SACRAMENTO CA 95798

Owner
P O BOX 980250
WEST SACRAMENTO CA 0

Owner
P O BOX 980700
WEST SACRAMENTO CA 95798

Owner
P O BOX 980874
WEST SACRAMENTO CA 95799

Owner
P O BOX 980968
WEST SACRAMENTO CA 95798

Owner
P O BOX 981324
WEST SACRAMENTO CA 95798

Owner
P O BOX 981450
WEST SACRAMENTO CA 0

Owner
P O BOX 986
WEST SACRAMENTO CA 95691

Owner
P O BOX 993
LOTUS CA 95651

Owner
PO BOX 1504
WEST SACRAMENTO CA 95691

Owner
PO BOX 2400
WALNUT CREEK CA 94595

Owner
PO BOX 7576
STOCKTON CA 95219

Owner
PO BOX 832
WEST SACRAMENTO CA 95691

Owner
PO BOX 832
WEST SACRAMENTO CA 95691

Owner
RT 10 GREEN HILL PO BOX 563
READING PA 19603

Owner
854 LAKE FRONT DR
SACRAMENTO CA 95831

Owner
8591 GERBER RD
SACRAMENTO CA 95828

Owner
861 42ND ST
SACRAMENTO CA 95819

Owner
861 42ND ST
SACRAMENTO CA 95819

Owner
8615 ELDER CREEK RD STE 200
SACRAMENTO CA 95828

Owner
8622 BANFF VISTA DR
ELK GROVE CA 95624

Owner
866 EMBARCADERO DR
WEST SACRAMENTO CA 95605

Owner
8663 CREEKWOOD WAY
FAIR OAKS CA 95628

Owner
8700 TECHNOLOGY WAY
RENO NV 89521

Owner
874 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
8744 BLUFF LN
FAIR OAKS CA 95628

Owner
875 PATROL RD
WOODSIDE CA 94062

Owner
8761 ELK GROVE BLVD
ELK GROVE CA 95624

Owner
8775 FOLSOM BLVD STE 200
SACRAMENTO CA 95826

Owner
879 F STREET STE 120
WEST SACRAMENTO CA 95605

Owner
880 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
8848 GARDEN GLEN WAY
SACRAMENTO CA 95826

Owner
8870 CAMPTON GLEN PL
ELK GROVE CA 95624

Owner
890 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
8941 BOND RD
ELK GROVE CA 95624

Owner
898 SHORE BREEZE DR
SACRAMENTO CA 95831

Owner
900 HILLVIEW DR
DIXON CA 95620

Owner
900 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
9009 RAILROAD AVE
OAKLAND CA 94603

Owner
901 MARINERS ISL BLVD STE 7
SAN MATEO CA 94404

Owner
902 CLINT MOORE RD STE 220
BOCA RATON FL 33487

Owner
902 S BASCOM AVE
SAN JOSE CA 95128

Owner
905 DREVER ST
WEST SACRAMENTO CA 95691

Owner
910 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
910 SOULE ST
WEST SACRAMENTO CA 95691

Owner
918 JEFFERSON BLVD
WEST SACRAMENTO CA 95691

Owner
92 6TH ST
WEST SACRAMENTO CA 95691

Owner
920 DREVER ST
WEST SACRAMENTO CA 95691

Owner
920 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
920 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
9229 DAYLOR ST
ELK GROVE CA 95758

Owner
9271 LOUIS ST
ELK GROVE CA 95624

Owner
929 STILLWATER RD
WEST SACRAMENTO CA 95605

Owner
930 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
937 SIMON TERRACE
WEST SACRAMENTO CA 95605

Owner
930 WESTACRE RD
WEST SACRAMENTO CA 95691

Owner
929 SUTTER ST
FOLSOM CA 95630

Owner
940 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
9370 W STOCKTON BLVD #100
ELK GROVE CA 95758

Owner
945 COAL CT
SPARKS NV 89434

Owner
9460 W CHILES RD
DAVIS CA 95618

Owner
948 OAK ST
WEST SACRAMENTO CA 95605

Owner
950 RIVER CREST DR
WEST SACRAMENTO 95605

Owner
9534 FLORIN RD
SACRAMENTO CA 95829

Owner
955 LIGHTHOUSE DR
WEST SACRAMENTO CA 95605

Owner
958 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
960 GREEN STAR WAY
SACRAMENTO CA 95831

Owner
964 W CAPITOL AVE
WEST SACRAMENTO CA 95691

Owner
970 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
970 RIVER CREST DR
WEST SACRAMENTO CA 95605

Owner
971 F ST
WEST SACRAMENTO CA 95605

Owner
980 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
980 ROSEWOOD DR
SAN MATEO CA 94401

Owner
9819 VILLA FRANCISCO LN
GRANITE BAY CA 95746

Owner
9849 WEXFORD CIR
GRANITE BAY CA 0

Owner
985 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
995 FOUNTAIN DR
WEST SACRAMENTO CA 95605

Owner
996-B FLORIN RD
SACRAMENTO CA 95831

Owner
P O BOX 025719
MIAMI FL 0

Owner
P O BOX 1024
WEST SACRAMENTO CA 95691

Owner
P O BOX 1026
W SACRAMENTO CA 95691

Owner
ONE POST ST 34TH FL
SAN FRANCISCO CA 94104

Owner
P O BOX 1035
CLACKAMAS OR 97015

Owner
P O BOX 1137
WEST SACRAMENTO CA 95691

Owner
P O BOX 1166
WEST SACRAMENTO CA 95691

Owner
P O BOX 117508
CARROLTON TX 75011

Owner
P O BOX 1186
EAGLE POINT OR 97524

Owner
P O BOX 1207
STOCKTON CA 95201

Owner
P O BOX 1216
RICHMOND VA 23218

Owner
P O BOX 1232
WEST SACRAMENTO CA 95691

Owner
P O BOX 1234
WEST SACRAMENTO CA 95691

Owner
P O BOX 1247
WEST SACRAMENTO CA 95691

Owner
P O BOX 1324
WEST SACRAMENTO CA 95691

Owner
P O BOX 14932
PORTLAND OR 97293

Owner
P O BOX 14932
PORTLAND OR 97293

Owner
P O BOX 1500
HOUSTON TX 77251

Owner
P O BOX 1501
WEST SACRAMENTO CA 95605

Owner
P O BOX 15015
LOS ANGELES CA 90015

Owner
P O BOX 1504
WEST SACRAMENTO CA 95691

Owner
P O BOX 15223
SACRAMENTO CA 95851

Owner
P O BOX 15618
SACRAMENTO CA 95852

Owner
P O BOX 158
WEST SACRAMENTO CA 95691

Owner
P O BOX 161551
SACRAMENTO CA 95816

Owner
P O BOX 162223
SACRAMENTO CA 95816

Owner
P O BOX 163417
SACRAMENTO CA 95816

Owner
P O BOX 1660
WEST SACRAMENTO CA 95691

Owner
P O BOX 16601
DENVER CO 80216

Owner
P O BOX 175
WEST SACRAMENTO CA 95691

Owner
P O BOX 176
WEST SACRAMENTO CA 95691

Owner
P O BOX 1835
WEST SACRAMENTO CA 95691

Owner
P O BOX 1900
WEST SACRAMENTO CA 95691

Owner
P O BOX 20389
RALEIGH NC 27619

Owner
P O BOX 2118
MEMPHIS TN 38101

Owner
P O BOX 2184
WEST SACRAMENTO CA 95691

Owner
P O BOX 22970
SACRAMENTO CA 95822

Owner
P O BOX 230
WILTON CA 95693

Owner
P O BOX 239
WEST SACRAMENTO CA 95691

Owner
P O BOX 24065
SEATTLE WA 98124

Owner
P O BOX 2450
WEST SACRAMENTO CA 95691

Owner
P O BOX 25025
GLENDALE CA 91201

Owner
P O BOX 255525
SACRAMENTO CA 95825

Owner
P O BOX 2637
FRESNO CA 93745

Owner
P O BOX 2676
GRASS VALLEY CA 95945

Owner
P O BOX 271
WELMINGTON OH 45177

Owner
P O BOX 285
HOUSTON TX 77001

Owner
P O BOX 29046
PHOENIX AZ 85038

Owner
P O BOX 2959
TORRANCE CA 90509

Owner
P O BOX 3191
MODESTO CA 95353

Owner
P O BOX 320099
ALEXANDRIA VA 22320

Owner
P O BOX 327
WEST SACRAMENTO CA 95691

Owner
P O BOX 3272
AUBURN CA 95604

Owner
P O BOX 33
SANCARLOS SONORA MEXICO 85506

Owner
P O BOX 3408
SANTA FE SPRINGS CA 90670

Owner
P O BOX 34854
SACRAMENTO CA 95834

Owner
P O BOX 37
WEST SACRAMENTO CA 95691

Owner
P O BOX 401
WEST SACRAMENTO CA 95691

Owner
P O BOX 403
WEST SACRAMENTO CA 95691

Owner
P O BOX 417262
SACRAMENTO CA 95841

Owner
P O BOX 4369
HOUSTON TX 77210

Owner
P O BOX 442
WEST SACRAMENTO CA 95691

Owner
P O BOX 44
BRODERICK CA 95605

Owner
P O BOX 447
WEST SACRAMENTO CA 95691

Owner
P O BOX 471
AKRON OH 44309

Owner
P O BOX 48
FORT SMITH AR 72902

Owner
P O BOX 491
SAN QUINTIN VILLAGE CA 94964

Owner
P O BOX 5015
BUENA PARK CA 90623

Owner
P O BOX 563
READING PA 19603

Owner
P O BOX 576
WEST SACRAMENTO CA 95691

Owner
P O BOX 580793
ELK GROVE CA 95758

Owner
P O BOX 631
BODEGA BAY CA 94923

Owner
P O BOX 638
WEST SACRAMENTO CA 95691

Owner
P O BOX 65
RIO OSO CA 95674

Owner
P O BOX 667
PRINEVILLE OR 97754

Owner
P O BOX 673
WEST SACRAMENTO CA 95691

Owner
P O BOX 678
WEST SACRAMENTO CA 95691

Owner
P O BOX 711
WEST SACRAMENTO CA 95691

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P O BOX 715
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P O BOX 717
WEST SACRAMENTO CA 95691

Owner
P O BOX 735
WEST SACRAMENTO CA 95691

Owner
P O BOX 773
HINES OR 97738

Owner
P O BOX 776
WEST SACRAMENTO CA 95691

Owner
P O BOX 793
REPRESA CA 95671

Owner
P O BOX 800
WEST SACRAMENTO CA 95691

Owner
P O BOX 8000
CITRUS HEIGHTS CA 95621

Owner
P O BOX 807
WEST SACRAMENTO CA 95691

Owner
P O BOX 832
WEST SACRAMENTO CA 95691

Owner
P O BOX 84
ROSS CA 94957

Owner
P O BOX 852
WEST SACRAMENTO CA 95691

Owner
P O BOX 872
WEST SACRAMENTO CA 95691

Owner
P O BOX 874
WEST SACRAMENTO CA 95691

Owner
P O BOX 9
WESTLEY CA 95387

Owner
P O BOX 907
MIRA LOMA CA 91752

Owner
P O BOX 911
MARYSVILLE CA 95901

Owner
P O BOX 947
SAN JOSE CA 95108

Owner
P O BOX 968
THAYNE WY 83127

Owner
P O BOX 980031
WEST SACRAMENTO CA 95798

Owner
P O BOX 980160
WEST SACRAMENTO CA 95798

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P O BOX 980968
WEST SACRAMENTO CA 95798

Owner
P O BOX 981324
WEST SACRAMENTO CA 95798

Owner
P O BOX 986
WEST SACRAMENTO CA 95691

Owner
P O BOX 993
LOTUS CA 95651

Owner
PO BOX 1504
WEST SACRAMENTO CA 95691

Owner
PO BOX 2400
WALNUT CREEK CA 94595

Owner
PO BOX 7576
STOCKTON CA 95219

Owner
PO BOX 832
WEST SACRAMENTO CA 95691

Owner
PO BOX 832
WEST SACRAMENTO CA 95691

Owner
RT 10 GREEN HILL PO BOX 563
READING PA 19603

The Rivers Homeowners Association
101 Parkshore Dr, Suite 100
Folsom, CA 95630

West Sacramento Levee Improvements Program

Progress and Announcement of Public Meeting

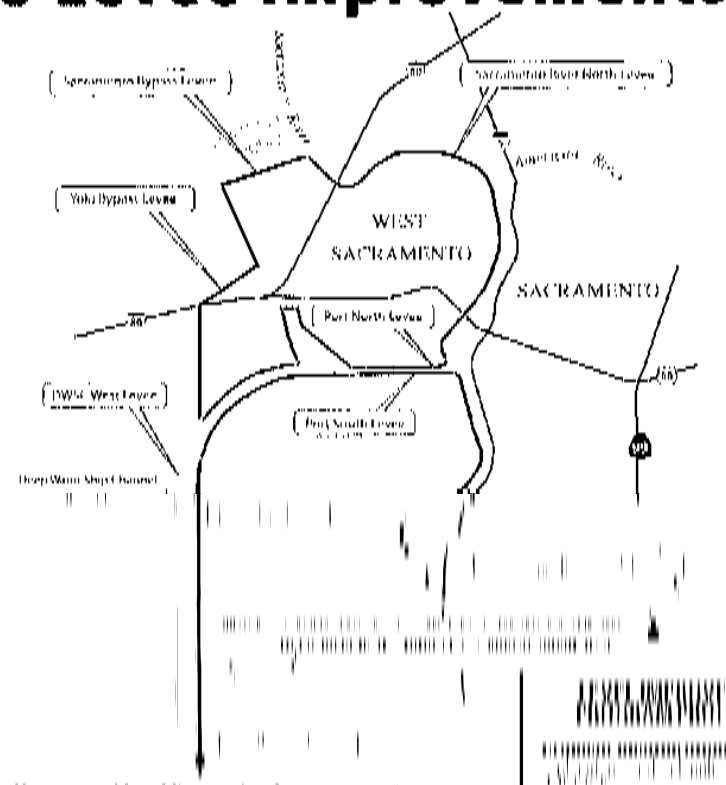
The West Sacramento Area Flood Control Agency (WSAFCA) and the City are continuing to move forward with the West Sacramento levee improvements program. The goal of the improvement program is to achieve a 200 year level of flood protection for West Sacramento. A program this large takes many years to implement, but some progress can already be celebrated. Ahead of the levee improvements program, WSAFCA and the City completed the design, environmental documentation, and permitting for a levee improvement project near the I Street Bridge, using assessment funds approved by West Sacramento voters to achieve greater flood safety. After the project began in September 2008, construction was completed in two months' time, a remarkable achievement.

The California Department of Water Resources and the US Army Corps of Engineers have entered in partnership with WSAFCA and the City on the levee projects. Under federal and state law, the projects must comply with both federal and state environmental standards. This compliance includes the drafting of an environmental document describing the environmental effects that may result from the construction and operation of the improved levees.

A public scoping meeting will be held Feb. 12 at City Hall

(1110 West Capitol Ave.) to update the public on the status of the overall levee improvements program and the environmental documentation process. Two meetings scheduled: 3:30 p.m. and 6:30 p.m. Poster boards





proximity within the levee. The utility relocation involved the relocation of over twenty fiber-optic communication conduits. Much of the work fronted the new CalSTRS building on the riverfront.

Now that the levee has been improved to current standards, the existing riverwalk can be extended north toward the I Street Bridge. This riverwalk extension project has already begun. But was put on hold during the levee improvements. This project will continue through the winter, depending on the weather, and is expected to be completed next spring.

The next levee projects will begin in early 2011, after completion of the required environmental reports.

[illegible] *Is your property protected by flood insurance? The City strongly recommends that ALL residents and businesses in West Sacramento purchase and maintain flood insurance policies.*

The Federal Emergency Management Agency (FEMA) is requiring that levees throughout the nation be evaluated to determine if they meet new federal levee design requirements. FEMA will use evaluation results to update flood insurance Rate Maps, which show the level of flood risk in each community. Property owners in communities with high flood risk and federally-backed mortgages on their property will be required to purchase flood insurance policies. Those who purchase and maintain flood insurance now, before new Flood Insurance Rate Maps are finalized, will pay less for insurance than those who wait.

Here's how it works: FEMA's current Flood Insurance Rate Maps show West Sacramento as an "X" Zone, meaning it has a low risk for flooding (based on previous federal levee design requirements). Property owners who currently carry flood insurance pay $700+ per year. However, in the event that the evaluations of West Sacramento's levees, under the new FEMA standards, show that they don't meet new federal levee design requirements, insurance will be required for property owners with federally-backed mortgages and the price will increase, especially if the property did not have flood insurance previously. FEMA may designate large areas of the city a high risk flood zone ("A" or "AE" Zones on FEMA's maps). The cost for brand new flood insurance, for the same amount of coverage as before, could be approximately $2,700 per year. Those who previously purchased and continually maintained flood insurance will be grandfathered into the "X" Zone designation for flood insurance rating purposes. The low-risk premiums of $700 will no longer apply, but the flood insurance premiums on grandfathered properties will only increase to approximately $1,100 per year.

[illegible] be eligible to receive state and federal funding for necessary flood protection improvements. These funds will add to the evidence of flood damage to structures and land. With the formation of the new district, the prior WSAFCA assessment of 1995 was eliminated. There are four factors used to calculate a parcel's assessment: land use classification, parcel acreage, first floor square footage, and potential depth of flooding. The assessment will be applied annually on property tax bills, and will be subject to a 2 percent maximum increase each year.

[illegible] proximity within the levee. The utility relocation involved the relocation of over twenty fiber-optic communication conduits. Much of the work fronted the new CalSTRS building on the riverfront.

Now that the levee has been improved to current standards, the existing riverwalk can be extended north toward the I Street Bridge. This riverwalk extension project has already begun. But was put on hold during the levee improvements. This project will continue through the winter, depending on the weather, and is expected to be completed next spring.

The next levee projects will begin in early 2011, after completion of the required environmental reports.

[illegible] during the design and permitting process. Slope stability analyses indicate that the levee does not meet the required factor of safety against slope instability. The design team considered several options to address the deficiency, including a landside berm, a waterside berm, or repair along the waterside face of the levee, but after careful hydraulic analysis it was determined that a landside repair was necessary at this site. The project is currently in the design process and the project will go out for construction bids in the spring. The construction work is anticipated to begin late summer or early fall, following the required environmental work.

Engineering and Design – detailed engineering of the treatment

Permitting – obtaining all environmental permits to construct the treatment

Construction – construction of the improvement typically during summer

More information

John Powderly, Associate Planner, (916) 617-4645
www.westsacfloodprotection.com

Brian Buttazoni, Biological Scientist, (916) 557-6956
www.spk.usace.army.mil/projects/civil/WestSacramento

On Cable Channel 20, daily at 5 p.m.*:
Watch the EMERGENCY PREPAREDNESS WORKSHOP, recorded in October 2008, at City Hall *May be preempted by current City Hall meetings

Organization	Contact Name	Phone	Comments
Department of Conservation	Rebecca Salazar	916-322-1080	left message on 2/26/09. Spoke with Rebecca on March 24 and she said they did receive it, but have no comment as it doesn't affect them.
Department of Fish and Game	Jeff Drogensen	916-358-2900	Jeff said they wouldn't comment on the project as it's pretty run of the mill. As long as we are having appropriate consultation with them,
Native American Heritage Commission	Debbie Pilus Treadway	916-653-4038	Spoke with Debbie on 3/2/2009 and she said they have no comment
Delta Protection Commission	Linda Fiack	916-776-2290	left message on 2/26/09
CA Department of Parks & Recreation	Bob Baxter	916-893-3471	He said that CDPR doesn't have facilities in West Sacramento. Unless the project somehow extends to City of Sacramento , then it's out of their
State Lands Commission	Gail Newton	916-574-1880	Gail said they plan to send their comment by March 2. We received her
Sacramento County Regional Sanitation District	Sharon Seargent	916-876-6016	left message with PIO office on 2/26/09 and a second message on March 23.
Department of Waterways and Boating	Lucia Becerra	1-888-326-2822	Left message 2/26/09 in general mail box for Lucia. Left second message
Sacramento County Environmental Review Department	George Booth	916-874-6851	Left message 2/26/09. He said they do not plan to comment.
CVRWQCB	Greg Vaughn	916-464-3291	Greg said they do not plan to comment on the NOP.
State Historian, Office of Historic Preservation		916-653-6624	Left message with Susan Stratton on March 2. Left second message on March 20, 2009.
State Reclamation Board (CVFPB)	Eric Butler	916-574-0609	We left initial message on Feb. 24. We called back on March 20, 2009 and spoke with Jill, who said she will look into whther they had received the NOP or not and get back to us by Monday, March 23. Eric is out of the office and will get back to us asap. James Herota called us on March 25. We emailed him a copy of the NOP on the 25th. Email address is:
State Lands Commission, Environmental Division	Marina Brand	916- 574-1900	Left message with Marina 3/2/09. Called again and spoke with Marina on March 24; she said they need the SCH#. On March 26, we contacted her and left a message with the SCH # so she could track it to ensure
Bureau of Reclamation	Douglas Kleinsmith	916-978-5034	Left message 2/26/09
Caltrans District 3	Kendall Schinke	530-741-4591	I sent Kendall Shinke an e-copy of the NOP for her review on March 23. She was unaware of anyone receiving it at CT prior to March 23. Email:

Appendix B

Informational meeting materials

Welcome

West Sacramento Levee Improvements Program

Environmental Scoping Workshop

West Sacramento Area Flood Control Agency

U.S. Army Corps of Engineers

Please Sign in Here

Program Overview

West Sacramento Levee Improvements Program Purpose

West Sacramento Area Flood Control Agency (WSAFCA) is proposing the West Sacramento Levee Improvements Program (WSLIP) to improve West Sacramento's protection from flooding hazards.

Flood events in the last few decades have prompted reevaluation of levees throughout the United States. If the Sacramento region were to experience significant rainfall events similar to those in 1986 and 1997, multiple levee failures could occur and cause significant flooding and damages.

The City of West Sacramento, as part of WSAFCA, and in collaboration with the California Department of Water Resources, recently embarked on a comprehensive evaluation of the levees protecting the City. The U.S. Army Corps of Engineers (Corps) joined forces with WSAFCA in summer 2008 as the lead federal agency with authority over levee modifications.

Preliminary results are in: substantial improvements are necessary. The purpose of the WSLIP is to:

- achieve a minimum of "200-year" level of flood protection for the City of West Sacramento;
- construct levee improvements as soon as possible to reduce flood risk;
- construct levee improvements that are politically, socially, and environmentally acceptable; and
- provide recreational and open space elements for the city that are compatible with flood improvement actions.

West Sacramento Area Flood Control Agency (WSAFCA) is a Joint Powers Authority created in 1994 to coordinate planning and construction of flood protection facilities within its boundaries and to finance the local share of flood control projects. Member agencies of WSAFCA are the City of West Sacramento, California Reclamation District 900, and Reclamation District 537.

The U.S. Army Corps of Engineers provides engineering services to the nation by planning, designing, building and operating water resources projects, including flood control projects on the Sacramento River and San Joaquin Rivers. The USACE is charged with oversight of modifications to federal levees.

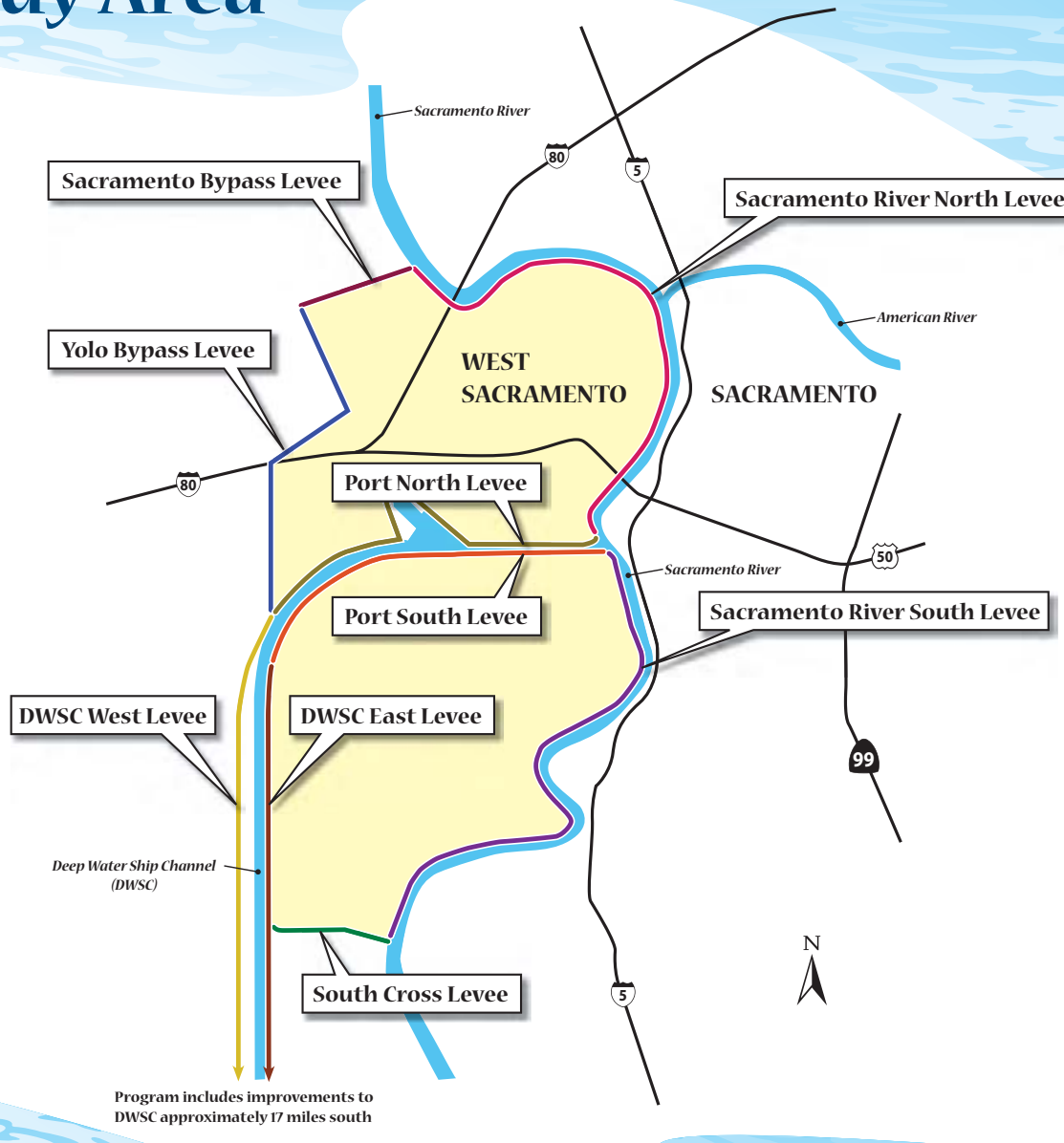


How did we get to the West Sacramento Levee Improvements Program?

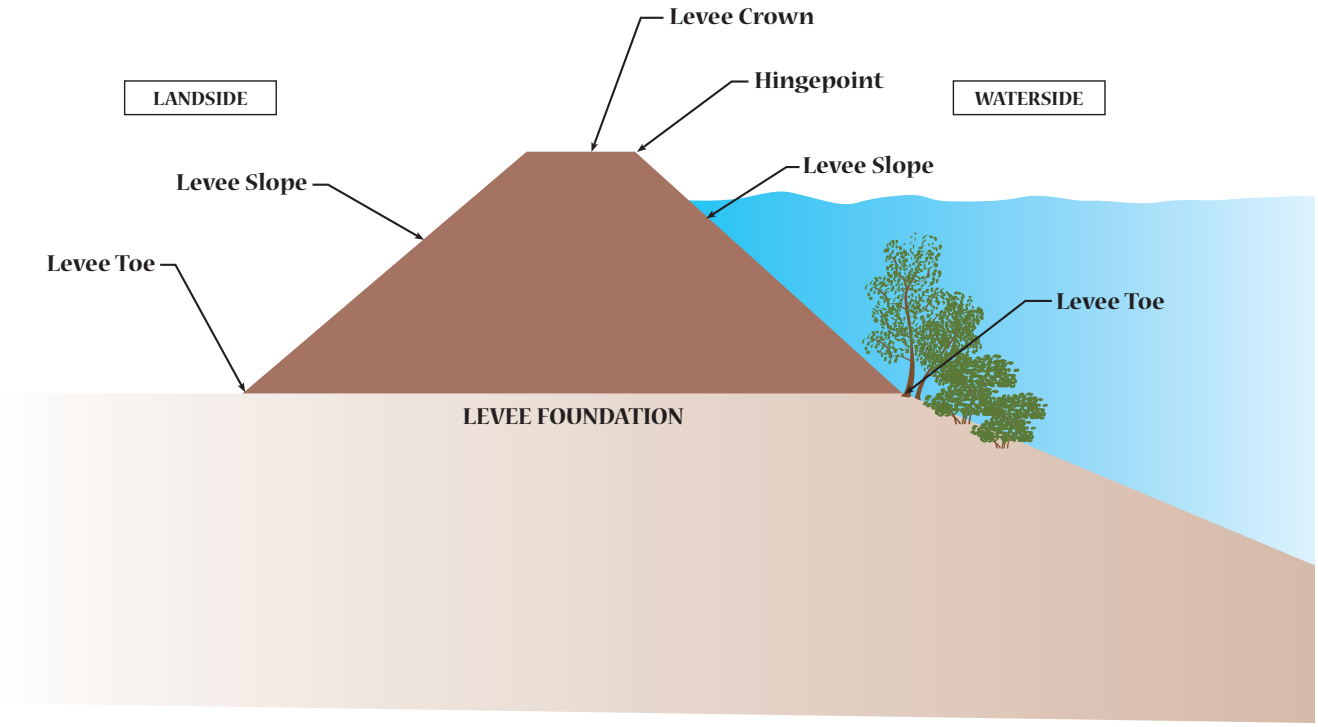
Over the past decades, there have been several flood protection evaluations and improvements for West Sacramento.

1986:	Significant rainfall event occurs in Sacramento region.
1987:	Corps recommends significant improvements for West Sacramento flood protection.
1987-1990:	City obtains federal funding and authorization for two levee improvements.
1990-1993:	Sacramento Urban Levee Reconstruction Project completes building of stability berm along the Sacramento River in Southport. Costs were $9 million; local share was $800,000.
1994:	WSAFCA was created to coordinate, fund and construct major flood protection improvements.
1997:	Significant rainfall event occurs in Sacramento region and levees sustain damage.
1999-2002:	Corps' West Sacramento Project strengthened five miles of levees adjacent to the Sacramento and Yolo bypasses. Costs were approximately $32.1 million; local share was $3.6 million.
2005:	Corps issues new levee design standards.
2006:	State performs critical erosion repairs on three sites in West Sacramento.
2007:	WSAFCA and the City of West Sacramento, in collaboration with California Department of Water Resources, embark on comprehensive evaluation of levees and propose WSLIP. WSAFCA also proposes an Early Implementation Project (EIP) to prevent seepage along the Sacramento River near I Street Bridge.
2008:	EIP at I Street is constructed. Corps joins as federal lead agency for WSLIP.

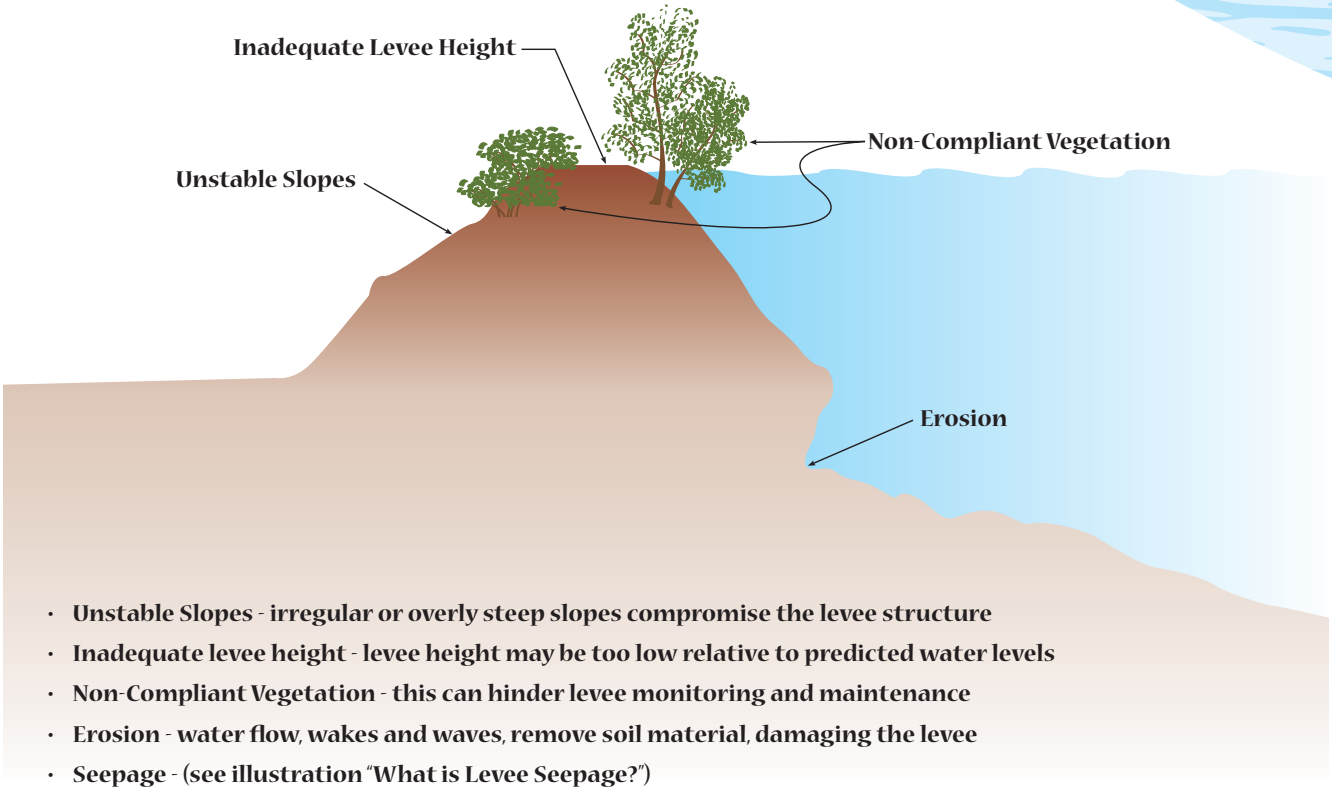
Study Area


Sacramento River
80
5
Sacramento Bypass Levee
Sacramento River North Levee
American River
Yolo Bypass Levee
WEST
SACRAMENTO
SACRAMENTO
80
Port North Levee
50
Sacramento River
Port South Levee
Sacramento River South Levee
DWSC West Levee
DWSC East Levee
99
Deep Water Ship Channel
(DWSC)
N
South Cross Levee
5
Program includes improvements to
DWSC approximately 17 miles south

An "Inside Look" at a Levee



Typical Levee Deficiencies



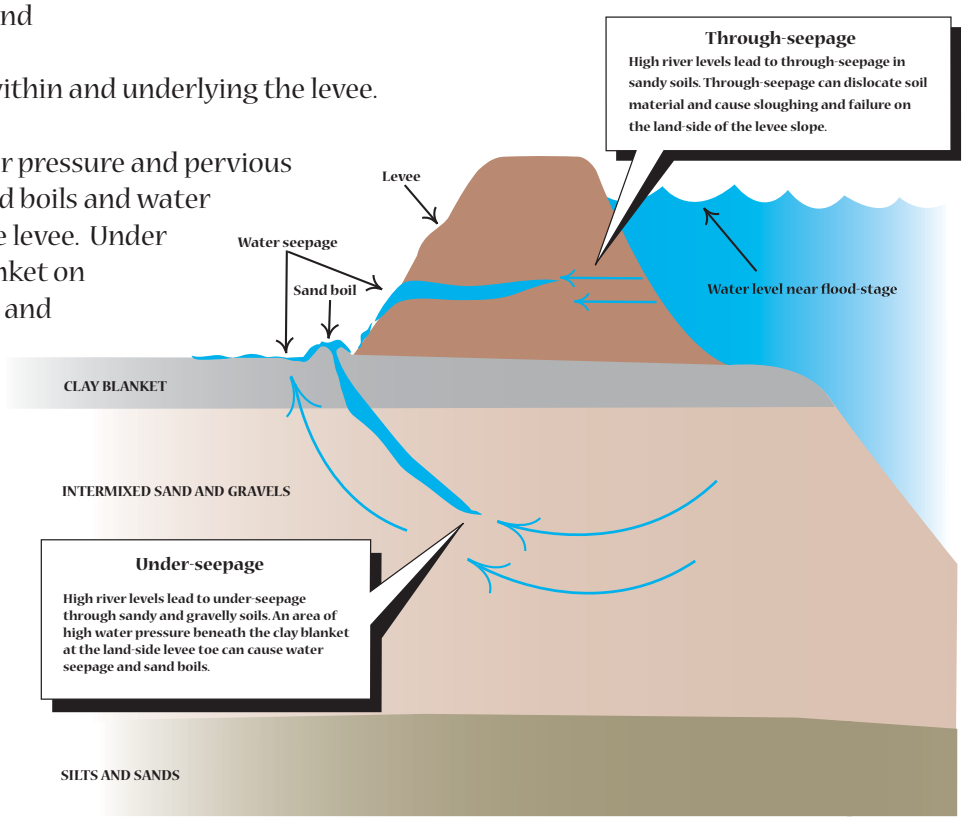
- Unstable Slopes - irregular or overly steep slopes compromise the levee structure
- Inadequate levee height - levee height may be too low relative to predicted water levels
- Non-Compliant Vegetation - this can hinder levee monitoring and maintenance
- Erosion - water flow, wakes and waves, remove soil material, damaging the levee
- Seepage - (see illustration "What is Levee Seepage?")

What is Levee Seepage?

Levee seepage is when water moves away from the river channel, either below or through the levee and surrounding land surface (see diagram below). Two main factors contribute to seepage:

- high water pressure within the river (such as during periods when the river is near flood-stage); and
- pervious earth material within and underlying the levee.

The combination of high water pressure and pervious material can be evident in sand boils and water seepage on the land-side of the levee. Under severe conditions, the clay blanket on the land side may be ruptured and the increased flow of the under-seeping water undermines the levee, causing the levee to breach or collapse.

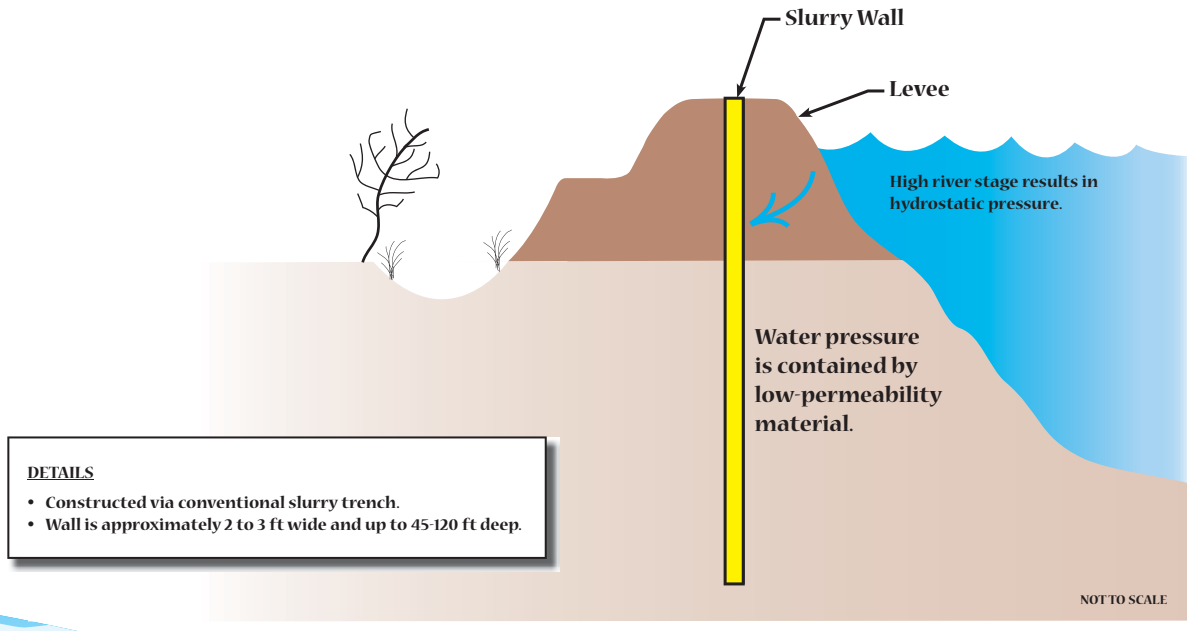


Potential Levee Improvements

Slurry Wall

Concept:

Water pressure is contained and dispersed by a low-permeability wall constructed within the levee cross section.



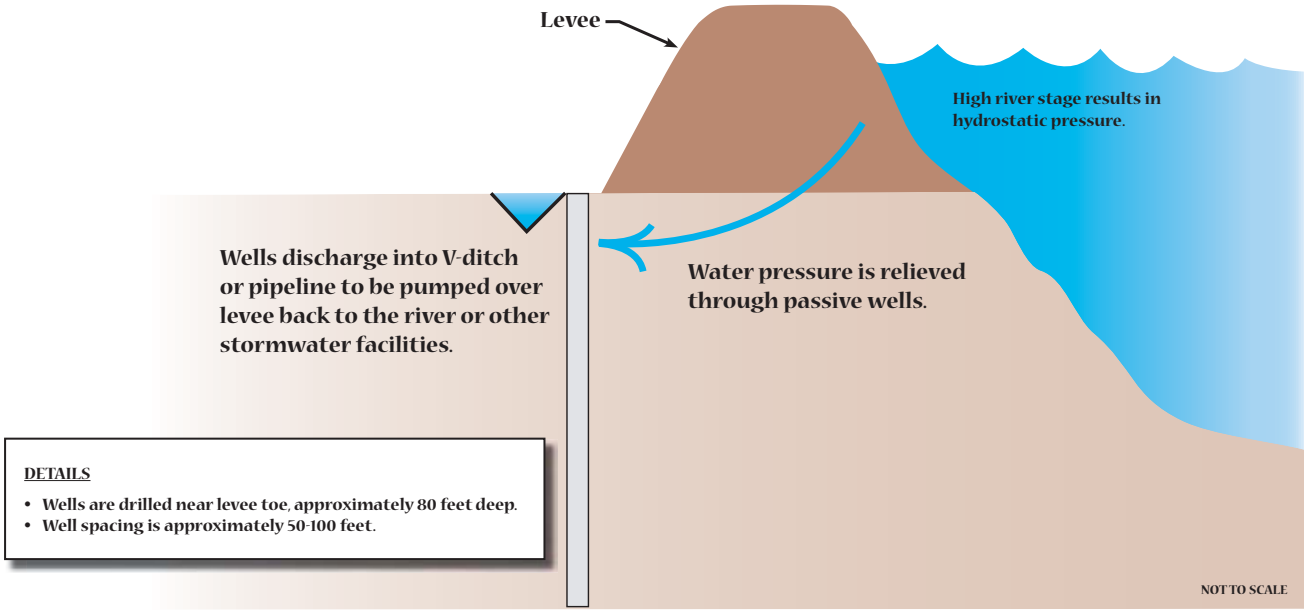
DETAILS

- Constructed via conventional slurry trench.
- Wall is approximately 2 to 3 ft wide and up to 45-120 ft deep.

Relief Wells

Concept:

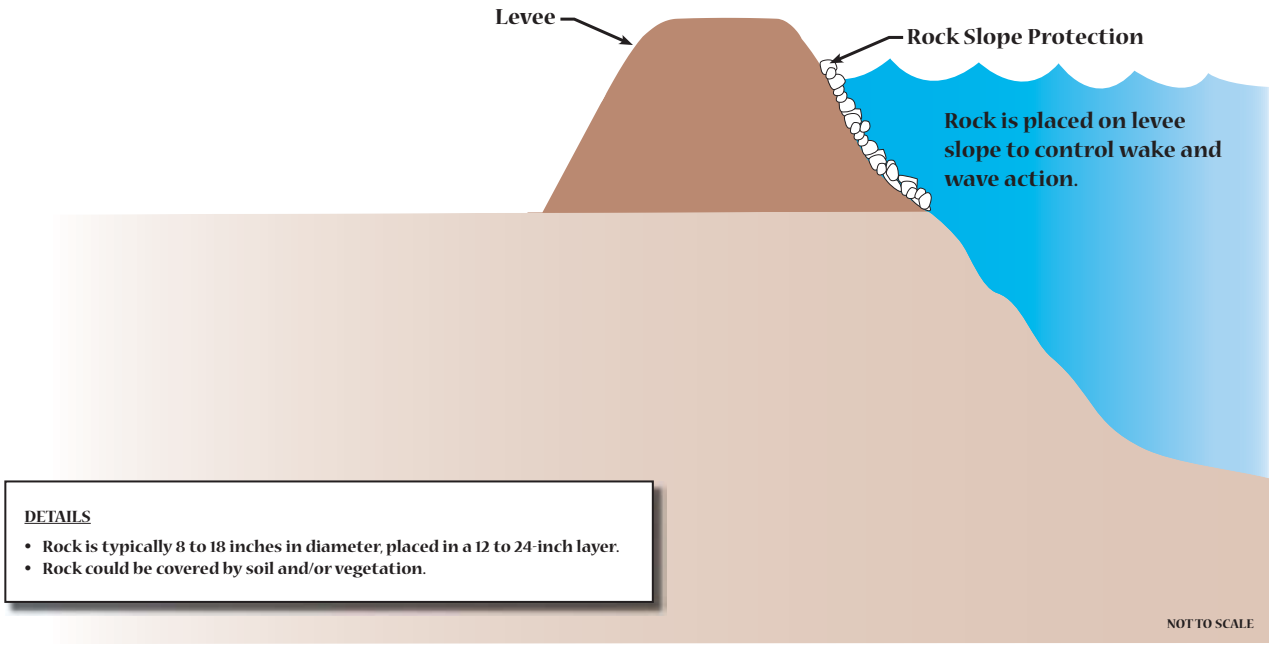
Water pressure is relieved via passive wells, which control water discharge into a collection system.



Rock Slope Protection

Concept:

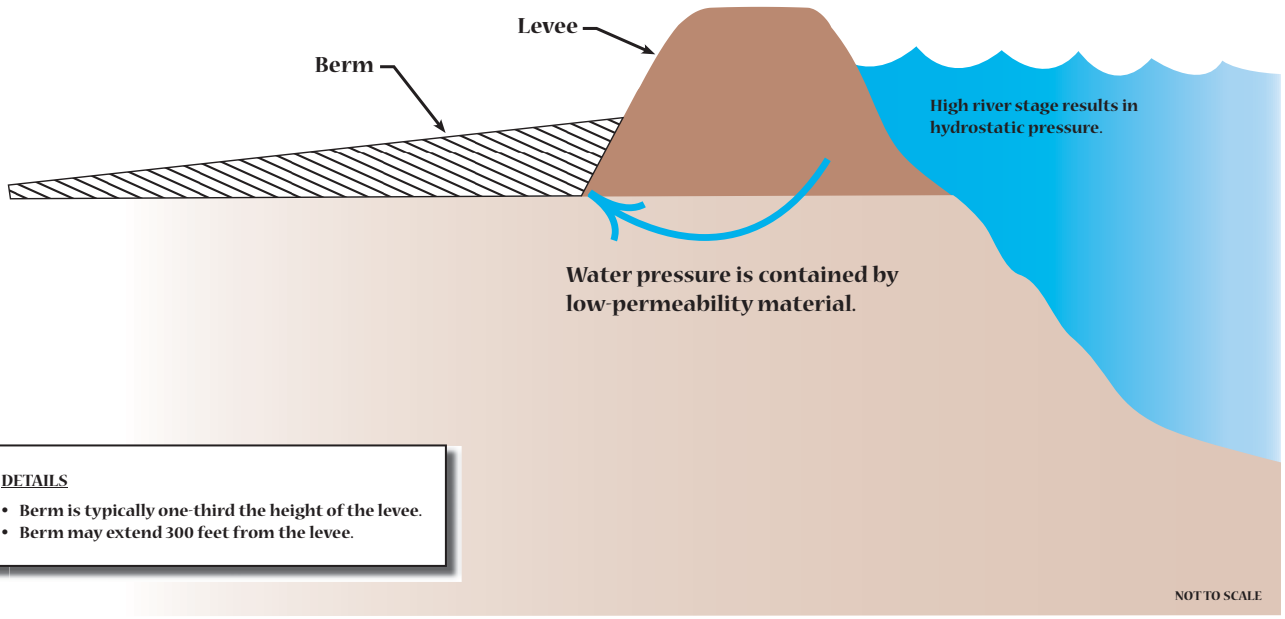
Water-side erosion is prevented by placement of rock.



Seepage Berm

Concept:

Water pressure is contained and dispersed by a thickened soil layer.



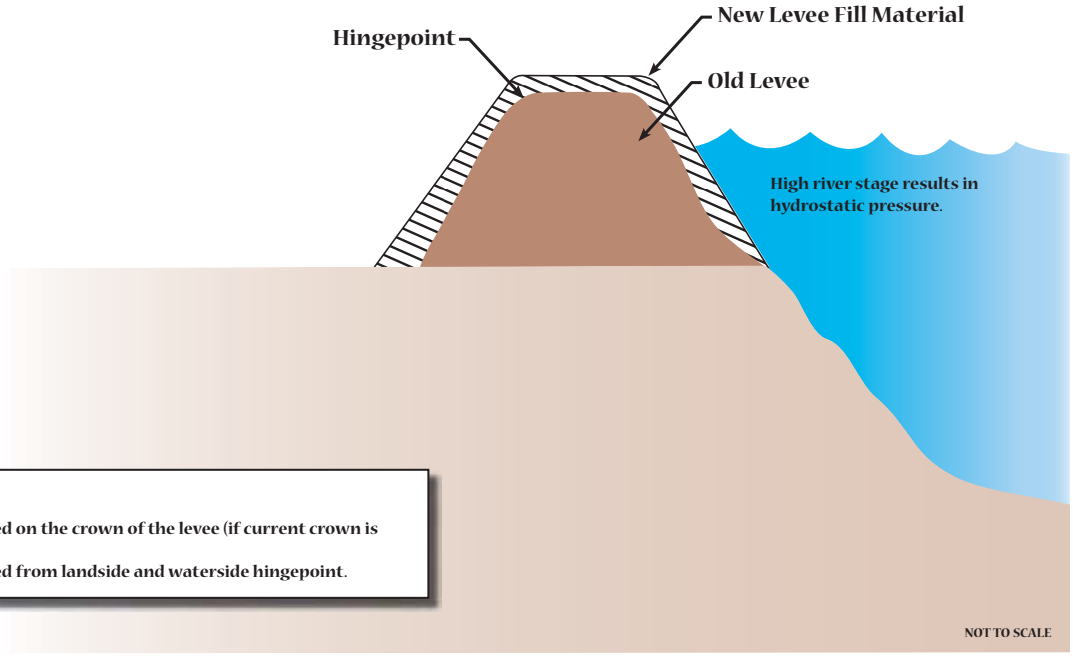
DETAILS

- Berm is typically one-third the height of the levee.
- Berm may extend 300 feet from the levee.

In-Place Levee Raise

Concept:

Flood protection is increased by adding material to crown and levee slope (land or water side).



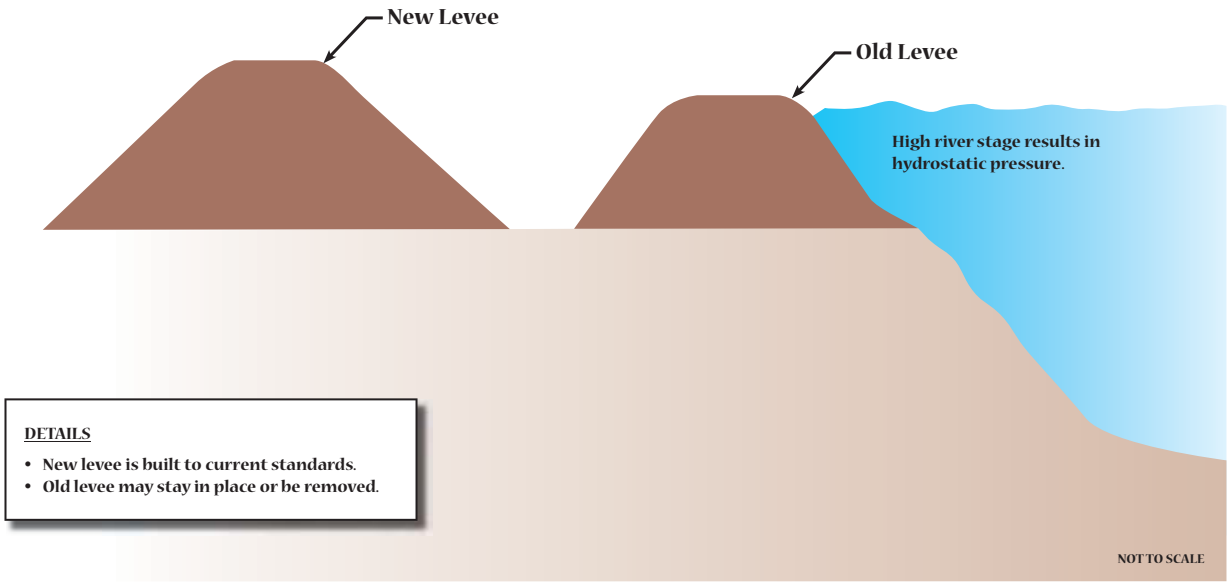
DETAILS

- Material is placed on the crown of the levee (if current crown is wide enough).
- Material is placed from landside and waterside hingepoint.

Setback Levee

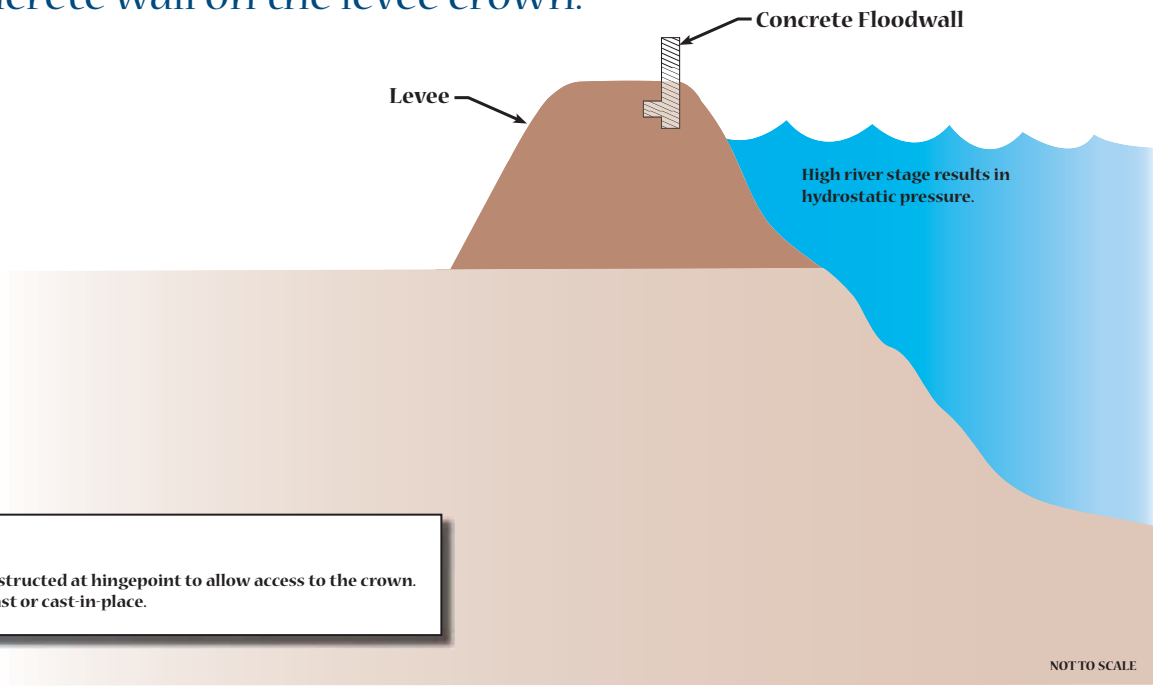
Concept:

A new levee is built toward the landside of an existing levee where the existing levee is not readily repairable or where more flooding capacity is desired.



Floodwall

Concept:
Additional levee height may be achieved through construction of a concrete wall on the levee crown.

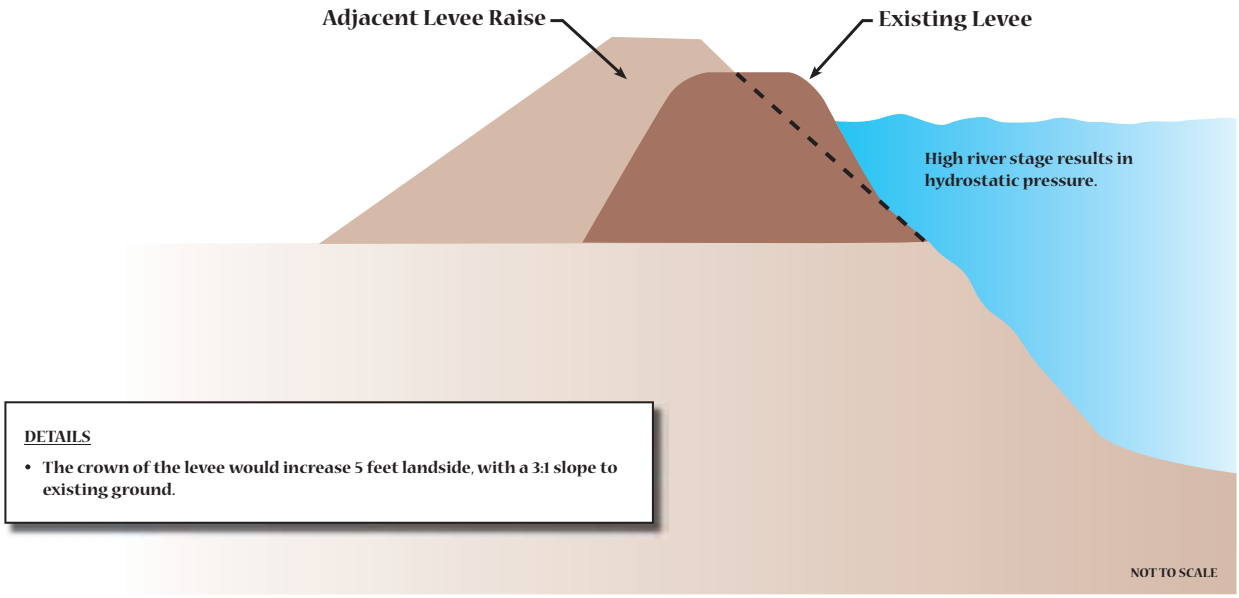


DETAILS

- Typically constructed at hingepoint to allow access to the crown.
- May be pre-cast or cast-in-place.

Adjacent Levee Raise

Concept:
A new embankment strengthens the existing levee and enlarges the slopes.



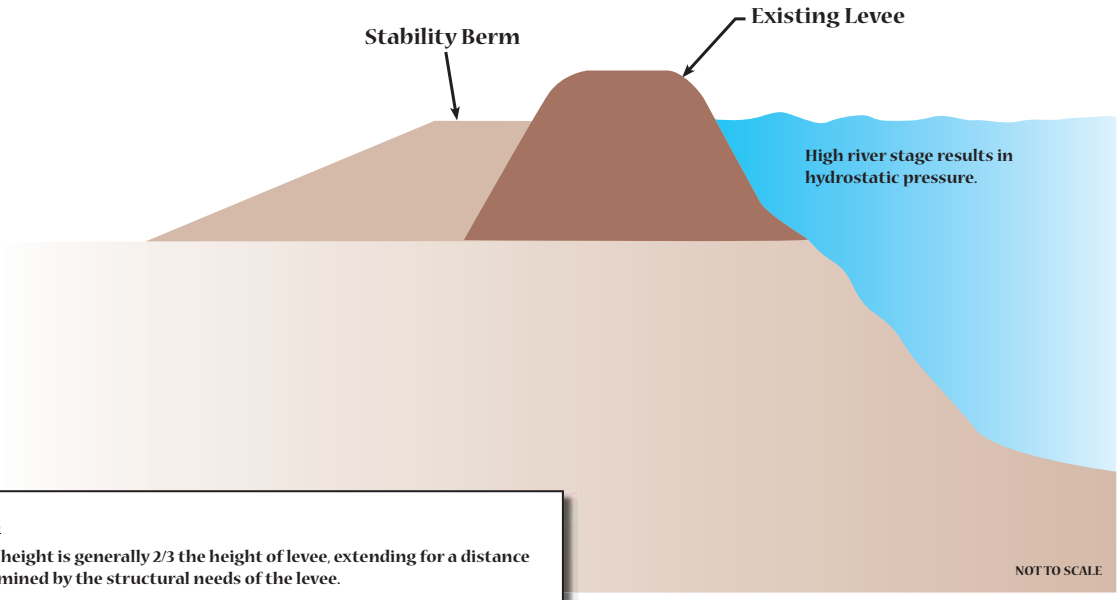
DETAILS

- The crown of the levee would increase 5 feet landside, with a 3:1 slope to existing ground.

Stability Berm

Concept:

Provides additional support to levee to increase strength.



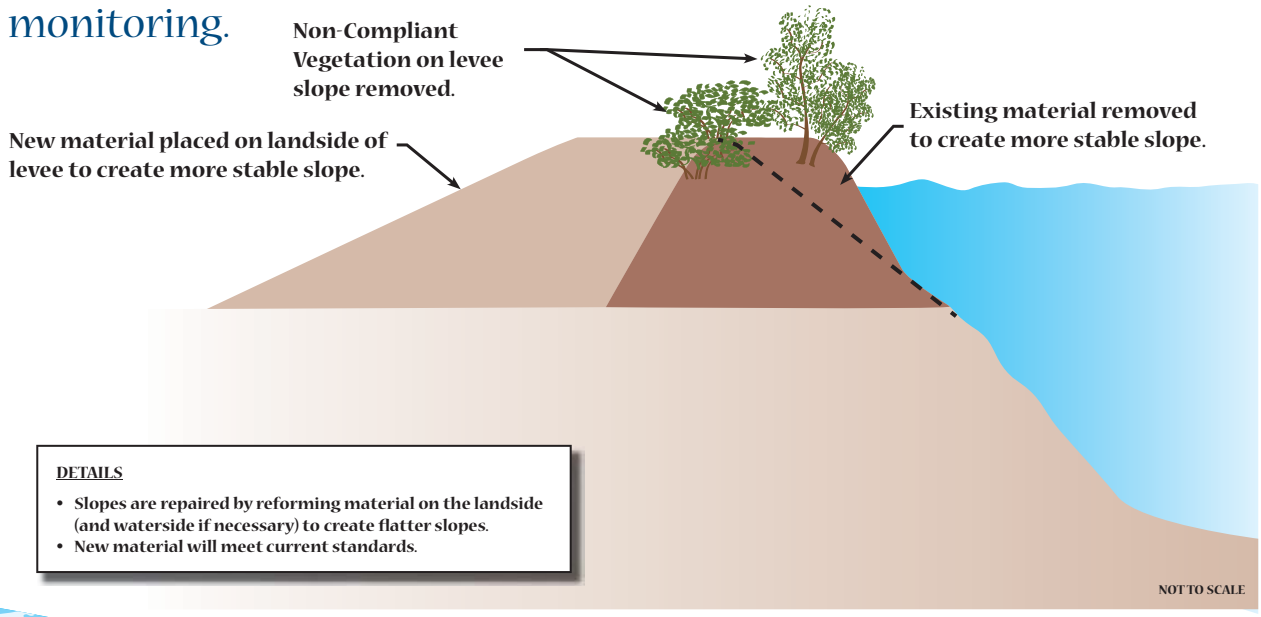
DETAILS

- Berm height is generally 2/3 the height of levee, extending for a distance determined by the structural needs of the levee.

Slope Flattening/ Vegetation Removal

Concept:

Flatter slopes are more stable and less susceptible to erosion. Non-compliant vegetation may inhibit levee maintenance and performance monitoring.

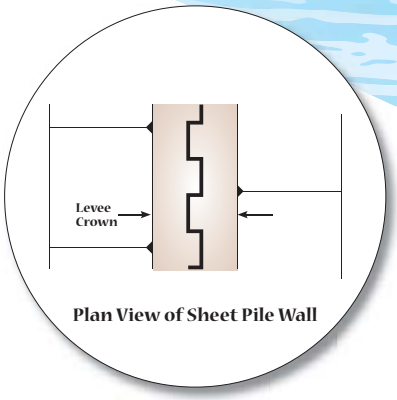


DETAILS

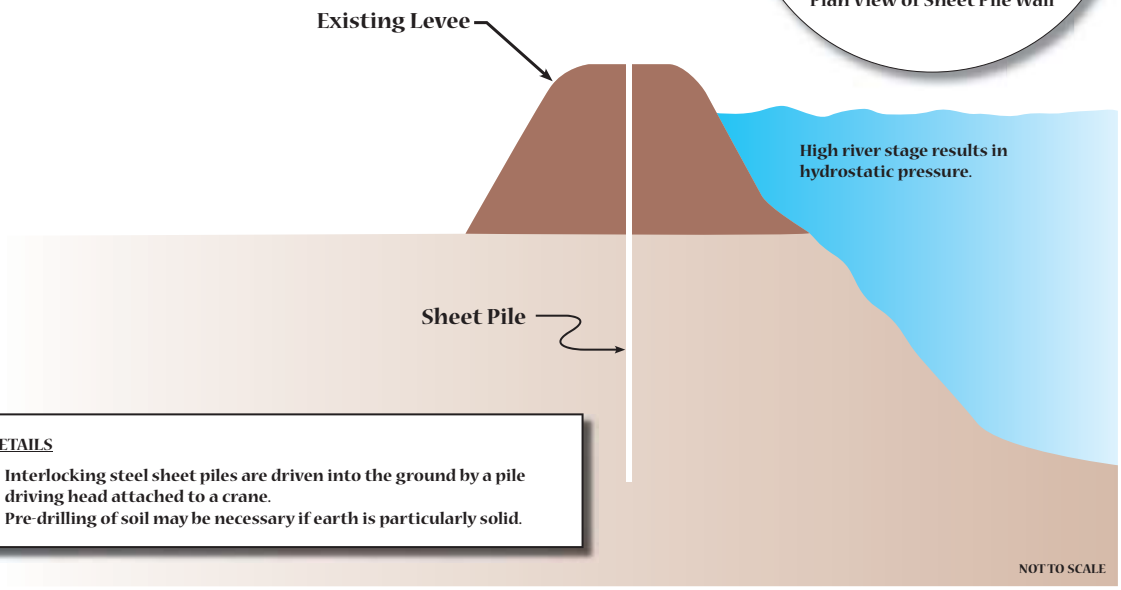
- Slopes are repaired by reforming material on the landside (and waterside if necessary) to create flatter slopes.
- New material will meet current standards.

Sheet Pile Wall

Concept:
Steel panels are driven into the levee core to provide a seepage barrier.



Plan View of Sheet Pile Wall



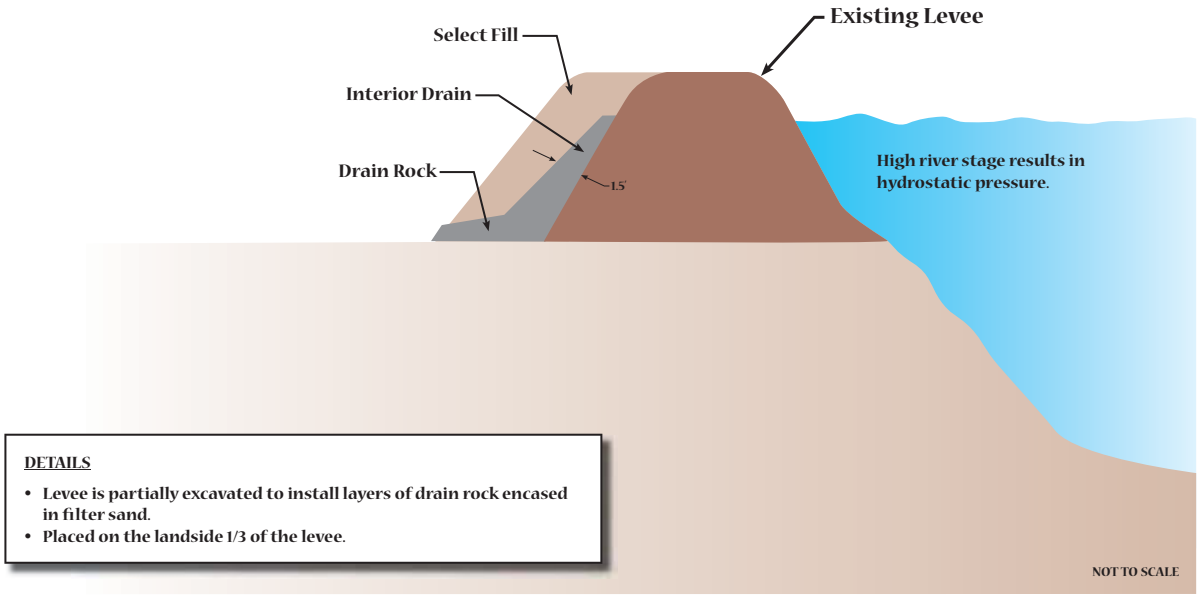
DETAILS

- Interlocking steel sheet piles are driven into the ground by a pile driving head attached to a crane.
- Pre-drilling of soil may be necessary if earth is particularly solid.

Interior Drain

Concept:

Capture any through-seepage and direct it away from the face of the levee.



DETAILS

- Levee is partially excavated to install layers of drain rock encased in filter sand.
- Placed on the landside 1/3 of the levee.

Planning Process and Early Implementation Projects

Planning Process

A process of addressing three key questions:

(2007-2008)
Problem Identification

Key Question: How do levees compare to current levee design criteria?

- Soil core drilling and geotechnical analysis to determine soil conditions and the exact geometry (shape) of all the levees;
- Identify where erosion has or is currently occurring;
- Identify the location of all existing utilities.

(2008)
Alternatives Analysis

Key Question: What levee improvements (alternatives) are best for each levee?

- Look at best methods for improving specific levee problems;
- Consider land uses, utilities, or other existing constraints;
- Consider the space required for construction activities;
- Consider whether the improvement is most effective and efficient for the cost.

(2008-2010)
Environmental Analysis – NEPA/CEQA

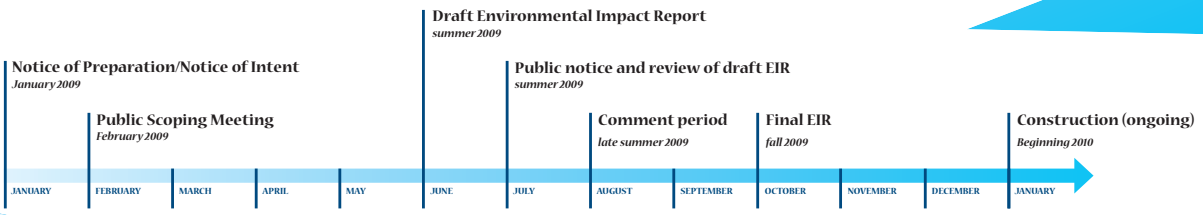
Key Question: What potential environmental effects could each improvement have in the following areas?

- Water – groundwater, surface water, flood control • Soils and Mineral Resources • Transportation and Navigation • Air quality • Noise • Biological Resources – vegetation, fish, wildlife • Land use – residential, recreational, agricultural • Population and Housing • Utilities and Public Services • Visual Resources • Public Health and Environmental Hazard • Cultural Resources

What is an EIS/EIR?

An EIS/EIR is a detailed document prepared by federal and state Lead Agencies that analyzes a project's potential significant or adverse effects on the human or natural environment and identifies mitigation measures and reasonable alternatives to avoid those effects.

WSLIP Estimated Timeline for NEPA/CEQA



Environmental Considerations

Scoping is an early and open process designed to determine the issues and the alternatives to be addressed in the EIS/EIR.

The following issues have been identified to date:

- riparian vegetation and habitat effects on species such as giant garter snake and valley elderberry longhorn beetle;
- Sacramento River fishery effects on species such as salmon and smelt;
- flood control and river hydraulic effects;
- location of flood control infrastructure and effects on land use and access;
- cultural resources effects; and
- temporary construction effects, such as those on transportation, air quality, and noise

The following agencies will be consulted:

- U.S. Fish and Wildlife Service
- National Marine Fisheries Service;
- California Department of Fish and Game;
- State Office of Historic Preservation;
- Regional Water Quality Control Board; and
- Central Valley Flood Protection Board

Three Newly Proposed EIP Sites

Early Implementation Projects are projects that are implemented in advance of the overall WSLIP to address critical areas where the levee deficiency is well-defined and suitable potential improvements are known. WSAFCA is currently proposing three EIPs, commonly referred to as CHP Academy, The Rivers and Sac Bank Extension Site. In the EIS/EIR, these sites will be analyzed at a *project level*.





- **CHP Academy Site.** This site is approximately 8,500 feet in length, encompassing the Sacramento Bypass Levee and the northern 2,000 feet of the Sacramento River North Levee. Deficiencies at this site are through-seepage and geometry, along with small pockets of under-seepage and stability.



- **The River Site.** This site is approximately 4,500 feet in length and is located on the Sacramento River North Levee, just north of the confluence of the Sacramento and American Rivers, including part of The Rivers residential development. Levee deficiencies at this site include geometry, stability, and under-seepage.



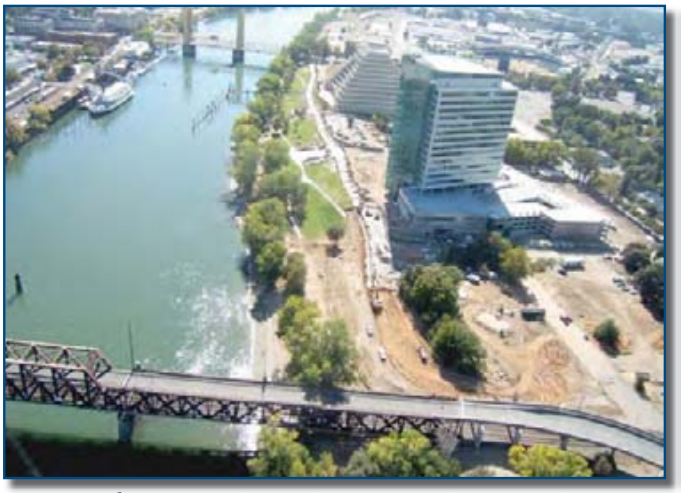
- **Sac Bank Extension Site.** This site is approximately 6,250 feet in length, extending along the Port South Levee and the Sacramento River South Levee, just south of the barge canal on the Sacramento River. Levee deficiencies are under-seepage, stability, and geometry, in addition to a few areas of erosion and insufficient levee height. This site adjoins, complements, and extends a separate Corps project under the Sacramento River Bank Protection Project (Sac Bank).

Completed "I" Street Bridge EIP



WSAFCA and the City completed the first EIP site under the WSLIP at the I Street Bridge location in fall 2008. The improvements for the I Street Bridge EIP site remedied seepage deficiencies in that reach, allowing the City to carry out plans for riverfront recreational improvements. The WSLIP team worked closely with the Corps to complete environmental analysis and permitting required to modify a federal project levee. This successful project resulted in the Corps joining as federal lead agency for the WSLIP. Joining with the Corps enables compliance with the National Environmental Policy Act and a streamlined process for securing future approvals to modify project levees.

The Corps, WSAFCA, and the City will have to undergo the same environmental and permitting processes for the CHP Academy, the Rivers, and the Sacramento Bank Extension sites, as those conducted for the I Street Bridge EIP site.



I Street Bridge EIP



Looking north on the Sacramento River near Sherwood Harbor Marina



Seepage berm at Bees Lake

Refreshments and Comment Cards

West Sacramento Levee Improvements Program
Environmental Impact Statement/
Environmental Impact Report

National Environmental Policy Act/
California Environmental Quality Act
Public Scoping Meeting

U.S. Army Corps of Engineers
West Sacramento Area Flood Control Agency

Welcome and Meeting Purpose

- Chris Elliott, Project Manager with ICF Jones & Stokes, environmental consultant for the WSLIP
- Joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) is being prepared per the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA)
- Opportunity to describe the program and EIS/EIR process
- Your comments invited to inform the environmental analysis

Lead Agencies

- West Sacramento Area Flood Control Agency (WSAFCA)
  - joint powers authority comprised of the City and the reclamation districts that maintain the levees around the City
  - overseeing planning and implementation of the improvements
  - lead agency under CEQA
- U.S. Army Corps of Engineers (USACE)
  - responsible for approval of modifications to federal flood project levees
  - responsible for approval of effects to protected resources under the Clean Water Act
  - lead agency under NEPA

Program Overview

- Communities throughout the Central Valley are at risk to flooding
- Flood issues have national attention (e.g., understanding risk, development within floodplains, level of protection, insurance requirements, climate change effects, flood protection responsibility)
- Revised risk projections (floodplain mapping) and flood protection standards (design and management criteria) have ensued
- Preliminary evaluation indicates improvements are necessary for West Sacramento

Program Objectives

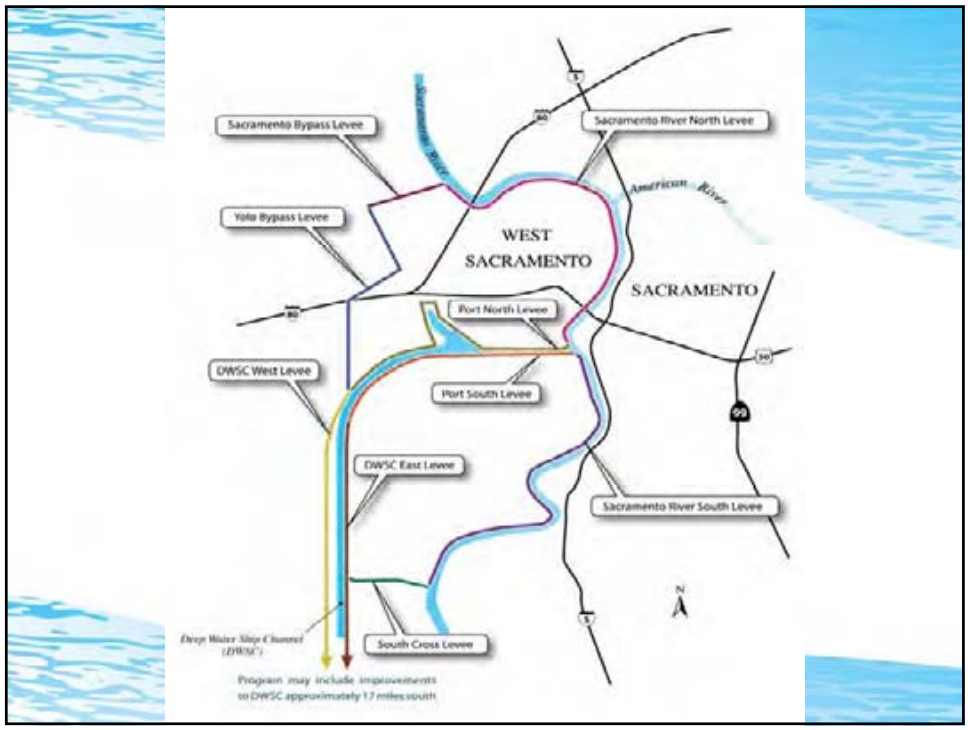
- Achieve a minimum of 200-year (an event that has a 0.5% chance of occurring in any given year) level of flood protection for the entire City by improving the approximately 50 miles of levees that protect it
- Construct levee improvements as soon as possible to reduce flood risk
- Provide recreational and open space elements for the City that are compatible with flood improvement actions

Program History

- Past Flood Protection Efforts
  - 1990-1993: $9 million in repairs to Southport levees
  - 1999-2002: $32 million in repairs on Sacramento and Yolo Bypass levees
  - 2006: 3 levee sites repaired by DWR
- Current Efforts
  - USACE planning repair to Sacramento River levee as part of Sacramento River Bank Protection Project (Sac Bank)
  - WSAFCA conducting comprehensive levee evaluation around entire City (this project)

Study Area

- 50+ miles of levees surrounding City
- Levees divided into nine homogeneous study reaches
- 17 miles along the Deep Water Ship Channel also being evaluated



Planning Process

- Problem Identification – locating and scoping deficiencies
- Alternatives Analysis – matching potential improvements to address the deficiencies
- Environmental Documentation – evaluating possible environmental effects from the potential improvements

Problem Identification – Typical Levee Deficiencies

- Inadequate levee height
- Unstable slopes
- Seepage (under or through the levee)
- Erosion
- Non-compliant vegetation

Alternatives Analysis – Possible Improvement Measures

- Raising the existing levee
- Constructing an adjacent or setback levee
- Slope flattening
- Seepage berms or stability berms
- Cutoff walls
- Levee drains and relief wells
- Stone protection
- Removing non-compliant vegetation

Environmental Documentation – Resource Issues

- Fisheries and wildlife, based on potential effects on riparian habitat on and near levees
- Hydrology and hydraulics, based on floodway modification
- Visual resources and recreation, based on removal of non-compliant vegetation
- Temporary construction-related effects, such as traffic, noise, and air quality

Environmental Documentation – Process

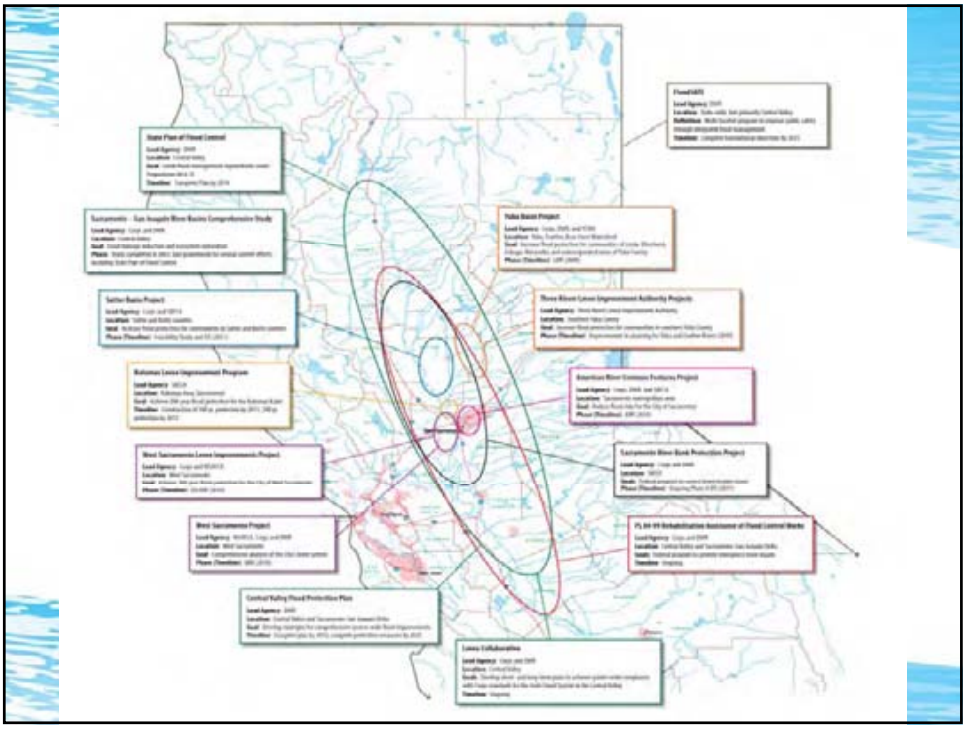
- Solicit public input to be considered in conducting the environmental analysis
- Prepare the environmental document
- Circulate draft environmental document for public review and solicit comment
- Review and respond to comments and prepare final environmental document
- WSAFCA adopts project and findings of fact, certifies EIR, adopts mitigation and monitoring plan, and records Notice of Determination
- USACE prepares Record of Decision

Early Implementation

- Sites are under evaluation for early implementation projects (EIPs) to parallel or precede the programmatic study based on nine criteria including
  - greatest improvement in public safety with least negative effects
  - availability of funds
  - integration of multipurpose objectives
- One EIP was completed in 2008
  - I Street Bridge site
- Three EIPs to be considered for 2010/2011 construction
  - CHP Academy site
  - The Rivers site
  - Sac Bank Extension site

Multi-objective Benefits

- Recreation
  - trails along the river corridor for biking and walking
  - river access for fishing and water play
  - passive activities like wildlife viewing and picnicking
- Open Space and Habitat
  - restored areas to mitigate project effects
  - enhancement of fish and aquatic habitat along the river's edge and wetland and upland areas on and near levees



Next Steps

- Ask questions of project team members at this meeting
- Provide written comments via mailed comment card or e-mail by February 28, 2009
- Look for the draft environmental document to be released in summer 2009

FAQ Frequently Asked Questions

Q: ***How safe are the levees surrounding West Sacramento?***

A: *The levees in West Sacramento are currently rated by the Federal Emergency Management Agency as providing a 100-year level of flood protection. However, due to new federal criteria, WSAFCA, USACE and DWR initiated studies to evaluate the levees. The evaluation findings show there are substantial improvements that need to take place. In 2008, WSAFCA completed levee improvement construction at the I Street Bridge EIP site, as part of the WSLIP.*

Q: ***What is the purpose of this project?***

A: *In the past 20 years, the Sacramento Valley has experienced large flood events that destroyed homes, businesses, and agriculture. Although many levees have been improved in the past two decades, improvements are still necessary to meet new levee criteria. To meet these criteria and protect its residents, WSAFCA, partnering with USACE and DWR, will be improving levees in the entire West Sacramento Basin, including parts of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, the Port of Sacramento, and the Sacramento Deep Water Ship Channel.*

Q: ***What problems are typically found within our levees?***

A: *The most typical and serious structural deficiencies found in any levee system, including the levees in West Sacramento, include:*

Erosion *– the breakdown of levee structures can be caused by fast-moving flows, waves, and recreational use of the levees.*

Under-seepage *– when rivers reach flood stage, pressure builds up in the levee substrate, forcing water under the levees and out of the ground. In this case, the integrity of the levee can be severely compromised, leading to failure.*

Through-seepage *– similar to under-seepage, this is seepage that occurs through the levee that can erode the interior and landside slope, leading to failure.*

Inadequate Levee Height*– levee height may be too low relative to predicted water levels during a flood.*

Unstable Slopes *– levees are comprised of irregular or overly steep slopes that can lead to failure.*

Q: ***How will these levee repairs be funded?***

A: *In July 2007, WSAFCA asked voters to pass a new annual parcel assessment from property owners to help raise necessary funds for levee improvements and repairs. The parcel assessment was approved and the monies raised will go toward levee improvements and supplement federal and state funding. In April 2007, the City Council also enacted an ordinance that requires new development to contribute to achieving 200-year flood protection. New development will have an option to demonstrate that new structures have 200-year flood protection or pay a fee in lieu of making physical improvements. This fee will go toward funding levee improvements. USACE and DWR are also funding partners for levee repairs.*

Q: ***How will levee construction affect me?***

A: *Major construction projects will not begin until 2010 or 2011. Typical construction inconveniences may include temporary partial road closures, minor increases in traffic, and construction-related noise.*

Q: ***When will the draft EIS/EIR be available for review? How can I keep up to date on progress?***

A: *The draft EIS/EIR will be available for 45-day review upon release. The tentative release date for the document is summer 2009. At that time, the public is invited to comment on the document, and all comments will be addressed in the final EIS/EIR. At least one public hearing will be held after the release of the draft EIS/EIR. Additionally, WSAFCA can be contacted below for more information regarding the WSLIP.*

John Powderly, Associate Planner
(916) 617-4645

West Sacramento Levee Improvements Program

About the WSLIP

In order to achieve the flood protection goals of the City of West Sacramento (City) and comply with current federal and state flood protection criteria, the West Sacramento Area Flood Control Agency (WSAFCA) and the U.S. Army Corps of Engineers (USACE) is proposing the West Sacramento Levee Improvements Program (WSLIP). The primary goal of the WSLIP is to achieve a 200-year level of flood protection for all those who live, work, or visit the City. Reaching a 200-year level of flood protection would protect the City from a flood event that has a half-percent chance of occurring in any given year. The WSLIP has the following objectives:

- provide a **comprehensive evaluation** of the entire levee system that protects the city (approximately 50 miles),
- develop **recommended strategies** to reach 200-year level of flood protection,
- provide a **basis for partnerships** with federal and state agencies to implement levee improvements, and
- provide **recreational and open space elements** for City residents that are compatible with flood improvement actions.

Based on lessons learned about levee failures throughout the nation and new design criteria for levees, WSAFCA began evaluation of the West Sacramento levee system as part of the WSLIP in 2006. WSAFCA engaged a consultant team of geotechnical engineers, flood protection and water resources engineers, and environmental consultants to evaluate nine reaches (i.e., geographic sections) of the levee system to determine deficiencies and solutions.



Some of the levee deficiencies that have been identified to date include erosion, seepage (through and under the levees), inadequate levee height, and unstable slopes. Potential treatments for these deficiencies include slurry cutoff walls, setback levees, seepage berms, and rock slope protection. Improvements for each reach will be determined based on criteria such as protection provided, construction costs, environmental considerations, and overall feasibility.



Completed I Street Bridge EIP site

Early Implementation Projects and Progress to Date

The I Street Bridge Early Implementation Project (EIP) was the first construction milestone for the WSLIP. An EIP is a critical repair site that has been identified for implementation in advance of implementation of the overall WSLIP. The I Street Bridge EIP resulted in the completion of 475 linear feet of slurry wall to treat through-seepage and under-seepage from the Sacramento River. Completion of repairs at this site not only increases flood protection but also allows the City to proceed with plans for waterfront development. The I Street Bridge EIP was completed in 2008. Three new EIPs are being evaluated parallel with the WSLIP. These potential EIPs are the CHP Academy site, the Rivers site, and the Sac Bank Extension site. Construction of any of these sites would not begin until 2010.

Accomplishments under WSLIP to date include:

2006 *WSLIP evaluation and identification of levee deficiencies began.*

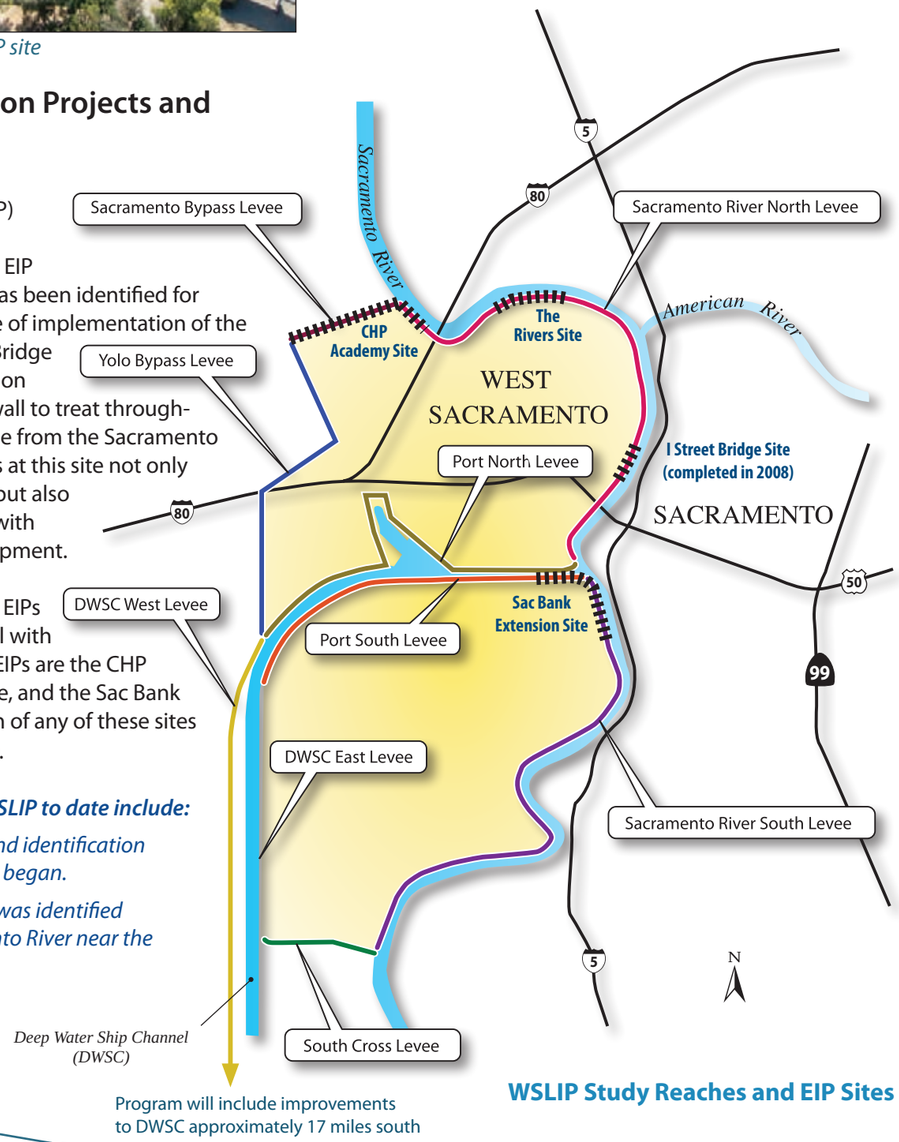
2007 *A critical repair site was identified along the Sacramento River near the I Street Bridge.*

The WSLIP team began analyzing the different potential improvements (alternatives) to alleviate the levee deficiencies within the study area.

2008 *In April, a draft Problem Identification Report outlining the initial conclusions of the levee evaluation was completed.*

The I Street Bridge EIP was completed in late summer 2008.

USACE joined the WSLIP as the federal lead agency for purposes of complying with the National Environmental Policy Act (NEPA).



WSLIP Study Reaches and EIP Sites

Partnerships for Flood Protection

About WSAFCA, USACE, and DWR

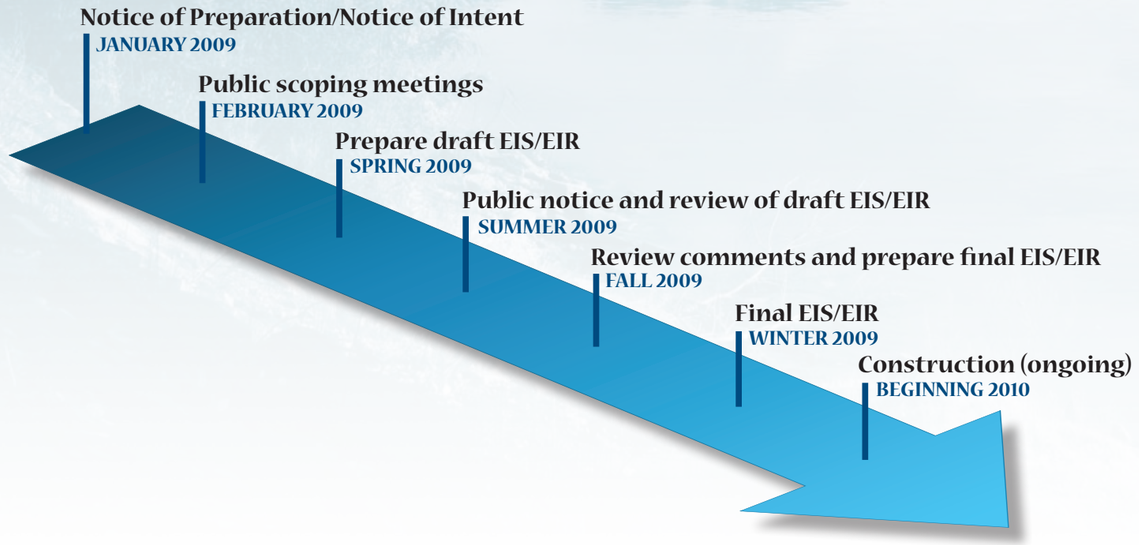
WSAFCA , USACE, and the California Department of Water Resources (DWR) are working collaboratively to improve flood protection for West Sacramento. WSAFCA is a joint powers authority formed in 1994 to coordinate the planning and construction of flood protection facilities and to finance the local share of flood control projects. Its member agencies are the City of West Sacramento and Reclamation Districts 900 and 537. DWR manages the water resources of California with a goal of protecting lives and infrastructure from flood risk as well as meeting water supply needs. USACE provides engineering services to the nation by designing, building, and operating water resource projects, including flood control projects on the Sacramento River. It is also charged with oversight of modification to federal levees and protection of resources under the Clean Water Act.

Environmental Analysis

An Environmental Impact Statement (EIS) and an Environmental Impact Report (EIR) are documents that are required to comply with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively. The purpose of these documents is to analyze and disclose a project's potential effects on the natural and human environment and identify mitigation measures and alternatives to avoid significant effects.

WSAFCA started preparing an EIR for the WSLIP in 2006 to comply with CEQA regulations. In 2008, USACE joined the WSLIP team as the federal lead and an EIS will also be prepared to fulfill federal requirements under NEPA. The document will be prepared as a "joint" EIS/EIR. A draft EIS/EIR is scheduled to be available for comment in summer 2009.

WSLIP Estimated Timeline for NEPA/CEQA Process



City of West Sacramento Levee Improvements Program

Comment Card

U.S. Army Corps of Engineers

Name:_____ Date:_____

Telephone: _____Email:_____

Affiliation: _____Title (if applicable):_____

Street Address:_____

City:_____ State:_____ Zip:_____

Thank you for your interest in the City of West Sacramento's flood control efforts and the West Sacramento Levee Improvements Program. The City, West Sacramento Area Flood Control Agency, and the U.S. Army Corps of Engineers value your input regarding this program. Please provide us with your comments regarding the scope of the Environmental Impact Statement/Environmental Impact Report associated with this levee improvement program in the space below. Please write legibly.

For your convenience, feel free to take this card with you, fill it out at your opportunity, and mail it into the City at a later date. ***All comments must be postmarked by Feb. 28, 2009.*** Thank you.

_____

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City of West Sacramento Levee Improvements Program

PLEASE FOLD ALONG THIS LINE FOR MAILING

John Powderly
Associate Planner
City of West Sacramento
1110 West Capitol Avenue 2nd Floor
West Sacramento, CA 95691

PLACE
POSTAGE
HERE

To: John Powderly
Associate Planner
City of West Sacramento
1110 West Capitol Avenue 2nd Floor
West Sacramento, CA 95691

Appendix C

Comments received

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
Relay Service From TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: **(916) 574-1814**
Contact FAX: **(916) 574-1885**

RECEIVED
MAR 02 2009
DEPARTMENT OF PUBLIC WORKS & COMMUNITY DEVELOPMENT

February 24, 2009

File Ref. SCH# 2007102130

West Sacramento Area Flood Control Agency
Attn. John Powderly
1110 West Capitol Avenue 2nd Floor
West Sacramento, CA 95691

Subject: Notice of Preparation of a Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) for West Sacramento Levee Improvements Program Project (WSLIP).

Dear Mr. Powderly:

Staff of the California State Lands Commission (CSLC) has received the above referenced Notice of Preparation of a Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) for West Sacramento Levee Improvements Program Project (WSLIP). Under the California Environmental Quality Act (CEQA), the CSLC is a Responsible and/or Trustee Agencies for any and all projects which could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters

The State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all the people of the State for statewide Public Trust purposes which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State's sovereign interests in areas that are subject to tidal action are generally based upon the ordinary high water marks of these waterways as they last naturally existed. In non-tidal navigable waterways, the State holds a fee ownership in the bed of the waterway between the two ordinary low water marks as they last naturally existed The entire non-tidal navigable waterway between the ordinary high water marks is subject to the Public Trust Easement. Both the easement and fee-owned lands are under the jurisdiction of the CSLC. The locations of the ordinary high and low water marks are often related to the last natural conditions of the river, and may not be apparent from a present day site inspection

The Sacramento Bank Extension Site and the Rivers Site are located in the Sacramento River, which is State-owned sovereign lands owned in fee by the State; therefore, a lease from the CSLC will be required. To the extent there are State-owned

sovereign lands at the California Highway Patrol Academy Site, a lease will also be required; however, a detailed site location will need to be submitted to the CSLC to determine the exact extent of the CSLC's leasing jurisdiction.

The current project is to address improving up to 50 miles of federal flood protection levees surrounding West Sacramento. The improvements will increase the level of flood protection to achieve a minimum of 200-year flood protection Improvements to the levee system will result in disturbance and the potential loss of riparian habitat along sections of the proposed project. These changes, along with those proposed for the other levee system enhancements in the Sacramento Valley, will result in a cumulative loss of riparian vegetation and shaded riverine aquatic habitat along the river bank, which will be difficult to mitigate and may result in secondary impacts to the listed runs of salmonids and listed avian species. The CSLC recommends that the West Sacramento Area Flood Control Agency (WSAFCA) work very closely with the fisheries agencies (i.e., California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), and NOAA Fisheries) and with local representatives of adjoining landowners (such as the Sacramento River Conservation Area Forum) to addresses these cumulative impacts and to design appropriate mitigation/conservation areas. Other types of mitigation, such as avoidance, both in time and space (such as construction work windows), will also need to be considered.

Queries of the Natural Diversity Database (CNDDB) and the USFWS Special Status Species Database should be conducted to identify any special-status plant or wildlife species that may occur in the region. Their potential for occurrence on the project site or in the project area should be included in the DEIS/ DEIR.

One of the major stressors of the Sacramento River system is introduced species. Therefore, the DEIS/DEIR should consider a range of alternatives for prevention programs for terrestrial and aquatic invasive species (including quarantine, early detection, and early response) to slow the introduction of invasive species, such as the Quagga mussel, into high demand and sensitive areas. As part of the alternative analysis, the design of the proposed project should take into consideration the current and proposed aquatic invasive species prevention programs. In addition, in light of the recent decline of pelagic organisms and in order to protect at-risk fish species, the DEIR/DEIS should examine the objectives of the project and determine if the project would favor non-native fisheries within the Sacramento River

An evaluation of the noise and vibration impacts on fish and birds from construction activities in the water, as well as construction on the levees and land-side supporting structures of the Sacramento River and flood control facilities, should be included in the DEIS/DEIR. Mitigation measures may be needed that would include species-specific work windows as defined by CDFG, USFWS, and NOAA Fisheries.

The Central Valley Flood Protection Board (CVFPB) encroachment permit may be required as well as a geotechnical evaluation of the proposed project locations. Placing rock riprap within the channels of the Sacramento River channel will require

to alter Federal flood protection levees (33 USC 408) Additional coordination with the CVFPB and the US ACE may include working within the established flood season windows

Any construction activities along the water-side bank should consider water quality issues, such as increased turbidity and sedimentation, and make all the necessary arrangements to reduce or mitigate for these concerns.

An evaluation of potential submerged cultural resources in the project area will need to be undertaken. Any submerged archaeological site or submerged historic resource remaining in state waters for more than 50 years is presumed to be significant. The title to all abandoned shipwrecks and all archaeological sites and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the CSLC. The CSLC maintains a shipwrecks database of known and potential vessels located on the state's tide and submerged lands, however, the location of many shipwrecks remains unknown. The recovery of objects from any submerged archaeological site or shipwreck requires a salvage permit under Public Resources Code (PRC) section 6309 On statutorily granted tide and submerged lands, a permit may be issued only after consultation with the local grantee and a determination by the CSLC that the proposed salvage operation is not inconsistent with the purposes of the legislative grant. A Code of Federal Regulations section 106 evaluation should be made, as well, to determine any potential terrestrial cultural resources in the project areas where construction can occur

Greenhouse gas emissions information consistent with the California Global Warming Solutions Act (AB 32) should be included in the DEIS/DEIR. This would include a determination of the greenhouse gases that will be emitted as a result of construction and ongoing maintenance of the levee system, a determination of the significance of those impacts, and mitigation measures to reduce any impacts found to be significant

An evaluation of the temporary and permanent loss of recreation resources in the specific areas during the construction of the Sacramento River levee and flood control facilities improvements should be included in the DEIS/DEIR. These impacts should include mitigation measures, which might include alternative public access points, for the residents and tourists for the area

The DEIS/DEIR should discuss the potential changes and impacts to current transportation routes into and out of areas during the construction of the proposed Sacramento River levee improvements and flood control facilities. Once again, these impacts should include mitigation measures for the residents and tourists of the area.

As a responsible agency, the CSLC will need to rely on this document for the issuance of a lease, and therefore, we hope that you consider our comments prior to adoption of the final EIS/EIR. Please contact Diane Jones, Public Land Manager, at 916-574-1843 or by email at jonesd@slc.ca.gov for information about our leasing

requirements For questions and comments related to the environmental review, please contact Christopher Huitt at (916) 574-1938 or by e-mail at huittc@slc.ca.gov
If you have any questions involving the Shipwreck and Historic Maritime Resources Program please contact Staff Counsel Pam Griggs at (916) 574-1854 or by email at griggsp@slc.ca.gov.

Sincerely,

Gail Newton, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
State Clearinghouse
P O. Box 3044
Sacramento, CA 95812-3044
Pam Griggs, CSLC
Diane Jones, CSLC
Chris Huitt, CSLC

Laurel Armer

From: Powderly, John [johnp@cityofwestsacramento.org]
Sent: Tuesday, February 17, 2009 1:40 PM
To: Buttazoni, Brian L SPK; Suazo, John SPK; Chris Elliott; Tanya Matson; Laurel Armer
Subject: FW: Comments on Proposed EIR

Gentlepeople,

A scoping comment, below. Greg Fabun is the head of West Sac's Public Works Ops & Maintenance. Chris, I forget if you wanted these comments to go to any particular person on your team. Accordingly, I sent this e-mail to you, Laurel, & Tanya. If I should/can narrow that down in the future, let me know. Thanks.

From: Fabun, Greg
Sent: Tuesday, February 17, 2009 12:24 PM
To: Powderly, John
Subject: Comments on Proposed EIR

John, I received the notice and the only comment I have at this point (from Public Works perspective) is to request that particular attention be given to the CHP Academy site as a portion of that EIP area encompasses piping, structures and equipment for the water treatment plant and the City's potable water supply. That's it for now. Thanks.

Greg Fabun
Public Works Manager
1951 South River Road
West Sacramento, CA 95670
916-617-4850
916-371-1516 fax

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
3500 Reed Avenue
West Sacramento, CA 95605-1677
(916) 376-3200
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(800) 735-2922 (Voice)

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DEPARTMENT OF PUBLIC WORKS &
COMMUNITY DEVELOPMENT

February 27, 2009

File No.: 091.A11529 West Sac levee repair

John Powderly
West Sacramento Area Flood Control Agency
1110 West Capitol Avenue, Second Floor
West Sacramento, CA 95691

Dear Mr. Powderly:

The California Highway Patrol Office of the Academy (Academy) is encouraged to see that the City of West Sacramento has moved to make necessary repairs to its levee system, thereby increasing the security and safety of the Academy's borders.

The repair work of our northern levee (Sacramento Bypass Levee) and the Sacramento River West/North Levee should have no significant impact on daily Academy operations. Both levee sections are no closer than one-third of a mile to the nearest dormitory room, so construction noise should not be an issue. Levee repair personnel can access both levees by way of Harbor Boulevard and River Road. Should it become necessary for repair personnel to gain access via Academy property, our staff will assist them in order to avoid disrupting cadet training.

If you need to contact the Academy, feel free to call (916) 376-3200. If it is an emergency, please call the Academy Staff Office at (916) 376-3315.

I wish you great success in your endeavor

Sincerely,

D. B. NEWMAN, Captain
Commander
Office of the Academy

City of West Sacramento
Levee Improvements Program

Comment Card

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FEB 23 2009
DEPARTMENT OF PUBLIC WORKS &
COMMUNITY DEVELOPMENT

U.S. Army
Corps of Engineers

Name: Mary Lasell Date: 2-23-2009

Telephone: (916) 372-8121 Email: _____

Affiliation: _____ Title (if applicable): _____

Street Address: _____

City: _____ State: _____ Zip: _____

Thank you for your interest in the City of West Sacramento's flood control efforts and the West Sacramento Levee Improvements Program. The City, West Sacramento Area Flood Control Agency, and the U.S. Army Corps of Engineers value your input regarding this program. Please provide us with your comments regarding the scope of the Environmental Impact Statement/Environmental Impact Report associated with this levee improvement program in the space below. Please write legibly.

For your convenience, feel free to take this card with you, fill it out at your opportunity, and mail it into the City at a later date. ***All comments must be postmarked by Feb. 28, 2009.*** Thank you.

See attached

City of West Sacramento Levee Improvement Program

Mary Lasell
(916) 372-8121
Resident
604 Todhunter Ave
Bryte, CA 95605

February 23, 2009
eyeonwsac@hotmail.com

My Comments

The Old River Road 22 from West Sacramento to Woodland (which passes over the Weir and is also a levee) according to a man from RD537 is not in good shape because of the semi trucks that are using this road as a cut through from I-5 to West Sacramento or vice versa to save driving three miles. When RD537 ends, RD1600 begins. Supposedly where the County maintains the road/levee; this road/levee isn't maintained as well as it has been in the past.

The statement about the non-compliant vegetation: If humans didn't interfere with levees—that non-compliant vegetation would not be an issue.

A lot of the areas (known as flood plains where farmers planted) the water naturally flowed into have been changed or eliminated (built on); so where is the water supposed to go?

The Rivers site: I thought that this levee had been repaired after the levee was compromised from building on it. Now I learn in this session that there is water bubbling (a boil perhaps) that this City has kept under wraps (in my opinion) from the community outside of the Rivers development. After asking more questions about further building on this site—I learn that there were already permits issued and (apparently no conditions on these permits such as a compromised or deteriorating levee) the City would have to pay for each permit if the City chooses not to allow the building to happen. I am demanding that we have such a condition in place that should any levee not meet the standard to be built on or near, the permit can be revoked at that time without any penalty or payment by the City. They are taking a chance and it should be noted with a big red stamp that says so. We should not have to compromise a levee for developers wants. People are more important than money. What guarantee is there going to be that the levee **will** be fixed? We thought the levee was fixed before.

It's not addressed in here, but how much damage to the environment and the river are the homeless camps creating? They are attracting rodents. The hazardous waste (various types) they leave behind!!!

I want our furry creatures left alone since they have nowhere else to go. I refer to coyotes, raccoons, rabbits, and the like.

How much damage do all the boats do as they are zooming up and down the river?

The CHP Academy site: Hasn't this site been fixed many times before? Why is there still a problem?

DEPARTMENT OF THE ARMY
U.S. Army Corps Engineers
Washington, DC 20314-1000

ETL 1110-2-571

CECW-CE

Technical Letter
No. 1110-2-571

10 April 2009

EXPIRES 10 April 2014

Engineering and Design

GUIDELINES FOR LANDSCAPE PLANTING AND VEGETATION MANAGEMENT AT LEVEES, FLOODWALLS, EMBANKMENT DAMS, AND APPURTENANT STRUCTURES

1. Purpose. This ETL provides guidelines to assure that landscape planting and vegetation management provide aesthetic and environmental benefits without compromising the reliability of levees, floodwalls, embankment dams, and appurtenant structures. It is important to note that all minimum guidelines presented herein are just that—minimums. The dimensions of the vegetation-free and root-free zones defined in this document provide the minimum acceptable buffer between vegetation and flood damage reduction structures. For each individual project, the design team must consider whether or not these minimums are adequate to the specific needs and conditions of the project.

2. Applicability. This ETL applies to all USACE Commands having Civil Works responsibilities and to all flood damage reduction projects for which USACE has responsibility for design, operation, maintenance, inspection, or certification. Applicability to non-federal projects is as follows: under the Rehabilitation and Inspection Program (RIP), the USACE performs inspections of non-federal projects (i.e. projects built by local communities then incorporated into the RIP) under ER 500-1-1 and the provisions of Public Law 84-99.

3. Distribution. Approved for public release, distribution is unlimited.

4. General. Levees, floodwalls, embankment dams, and their appurtenant structures serve a common purpose in that they are designed to contain water and prevent flooding for varying lengths of time. They must also be readily accessible by equipment and personnel essential to reliable operation and maintenance. The possibility for long-term saturation of levee materials or levee and floodwall foundations, together with their specific operation and maintenance requirements, makes it necessary to exercise caution in the design of landscape planting and

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This ETL supersedes:

EM 1110-2-301, *Guidelines for Landscape Planting and Vegetation Management at Floodwalls, Levees, and Embankment Dams*, 1 January 2000.

Memorandum, Headquarters, United States Army Corps of Engineers (HQUSACE) (CECW-HS), MG Don T. Riley, Subject: Interim Vegetation Guidance for Control of Vegetation on Levees, 12 June 2007.

vegetation management at these structures. This ETL describes important characteristics of levees, floodwalls, embankment dams, and their appurtenant structures.

5. Future Guidance. Planned research is intended to complement this guidance: future editions will include field studies of vegetation impacts to flood damage reduction structures and helpful information on the root system characteristics of various plant species.

FOR THE COMMANDER:

JAMES C. DALTON, P.E.
Chief, Engineering and Construction
Directorate of Civil Works

DEPARTMENT OF THE ARMY
U.S. Army Corps Engineers
Washington, DC 20314-1000

ETL 1110-2-571

CECW-CE

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CHAPTER 1
INTRODUCTION

1-1. Purpose. This ETL provides guidelines to assure that landscape planting and vegetation management provide aesthetic and environmental benefits without compromising the reliability of levees, floodwalls, embankment dams, and appurtenant structures. It is intended as a guide for safe design and not as a restriction to the initiative of designers. These guidelines should be used with reasonable judgment and practicality, tailored to the specific requirements and conditions of each individual project. The integrated design of landscape plantings and vegetation management at flood damage reduction systems requires a coordinated, interdisciplinary effort involving the local sponsor and the following disciplines: civil engineer, landscape architect, levee and/or dam safety engineer, environmental engineer, geologist, biologist, and additional related disciplines, as appropriate.

1-2. References.

a. USACE publications

EC 1110-2-6061
Engineering and Design, Safety of Dams – Policy and Procedures, 30 April 2004 (Transmits Draft ER 1110-2-1156, *Engineering and Design, Safety of Dams – Policy and Procedures*, 30 April 2004).

EM 1110-2-38
Environmental Quality in Design of Civil Works Projects, 3 May 1971.

EM 1110-2-1205
Environmental Engineering and Local Flood Control Channels, 15 Nov 1989 (Sections 4-8.d (4) and 5-1).

EM 1110-2-1601
Hydraulic Design of Flood Control Channels, 1 July 1991, with Change 1, 30 June 1994 (Sections 3-3 and 3-5).

EM 1110-2-1913
Design and Construction of Levees, 30 Apr 2000 (Sections 4-4 and 8-17).

EM 1110-2-2300
General Design and Construction Considerations for Earth and Rock Fill Dams, 30 July 2004.

EM 1110-2-2502
Retaining Walls and Floodwalls, 29 Sept 1989 (Section 7-16).

EP 500-1-1
Emergency Employment of Army and Other Resources. Civil Emergency Management Program – Procedures, 30 Sep 2001 (Section 5.8.k and Appendix E).

ER 200-1-5
Policy for Integrated Application of U.S. Army Corps of Engineers (USACE) Environmental Operating Principles (EOP) and Doctrine, 30 Oct 2003.

ER 500-1-1
Emergency Employment of Army Resources, Civil Emergency Management Program, Chapter 5, *Rehabilitation and Inspection Program*, 30 Sept 2001

ER 1110-1-12
Quality Management, Change 1, 30 Sept 2006.

ER 1110-2-1150
Engineering and Design for Civil Works Projects, 31 August 1999.

ER 1130-2-530
Project Operations - Flood Control Operations and Maintenance Policies, 30 October 1996.

ETL 1110-2-570
Certification of Levee Systems for the National Flood Insurance Program (NFIP), draft.

U.S. Army Corps of Engineers
Levee Owner's Manual for Non-Federal Flood Control Works, March 2006.

U.S. Army Corps of Engineers
Policy and Procedural Guidance for the Approval of Modification and Alteration of Corps of Engineers Projects, CECW-PB Memorandum, 23 Oct 2006.

b. FEMA publications

FEMA 473
FEMA (2005a) *Technical Manual for Dam Owners, Impacts of Animals on Earthen Dams*, FEMA 473, Sept 2005. http://www.fema.gov/plan/prevent/damfailure/publications.shtm

FEMA 534
FEMA (2005b) *Technical Manual for Dam Owners, Impacts of Plants on Earthen Dams*, FEMA 534, Sept 2005. http://www.fema.gov/plan/prevent/damfailure/publications.shtm

44 CFR Chapter 65.10, 1 Oct 2006
Mapping of Areas Protected by Levee Systems

c. Other publications

Association of State Dam Safety Officials (2002)
Association of State Dam Safety Officials (ASDSO) (2002) *A Technical Manual on the Effects of Tree and Woody Vegetation Root Penetrations on the Safety of Earthen Dams*, December 2002.

1-3. Policy.

a. Where the safety of the structure is not compromised, and effective surveillance, monitoring, inspection, maintenance, and flood-fighting of the facility are not adversely impacted, appropriate landscape planting (trees, shrubs, vines, forbs, and grasses) may be incorporated into the design of all flood damage reduction projects, subject to the limitations set forth in this document. Because landscape plantings enhance the environment, with respect to both natural systems and human use, they are to be considered in all flood damage reduction project planning and design studies and will be fully presented in design documentation reports. For projects in which the maintenance of the completed facility will be the responsibility of the local sponsor, the landscape planting will be fully coordinated with the local sponsor during planning and design to determine the sponsor's desires and to obtain assurances that the sponsor is capable of, and committed to, the proper maintenance of the vegetation.

b. In certain instances, to further enhance environmental values or to meet state or federal laws and/or regulations, the local sponsor may request a variance from the standard vegetation guidelines set forth in this ETL. Vegetation variances for either federal or non-federal flood damage reduction systems may be permitted. The vegetation variance must meet the following two criteria:

(1) The variance must be shown to be necessary, and the only feasible means, to (a) preserve, protect, and enhance natural resources and/or (b) protect the rights of Native Americans, pursuant to treaty and statute.

(2) With regard to flood damage reduction systems, the variance must assure that (a) safety, structural integrity, and functionality are retained, and (b) accessibility for maintenance, inspection, monitoring, and flood-fighting are retained. Note that, as used here, the term "retained" assumes a pre-variance condition that is fully consistent with the requirements set forth in this ETL, and any other applicable criteria.

Periodic clearing of some types of vegetation, both woody (trees, shrubs, and vines) and non-woody (grasses and forbs), will be performed, as needed, to maintain the conditions described in the second criterion. The variance will not be a substitute for poor maintenance practices. See the following references regarding variances to levee vegetation standards: ER 500-1-1, for policy; EP 500-1-1, for the request and approval process; and, any other applicable guidance issued subsequent to this document.

c. Any addition of landscape plantings to existing flood damage reduction systems must comply with the project's O&M manual. New plantings may not be approved without an appropriately detailed and documented engineering evaluation to ensure that design intent and safety criteria are maintained as originally authorized.

1-4. Environmental Quality and Aesthetics. Environmental quality and aesthetics are of special concern. The design and maintenance of flood damage reduction systems must fully consider the environmental implications of the proposed actions and ensure that they are

consistent with the doctrine outlined in the Corps' Environmental Operating Principles. Project design should respond appropriately to the visual character of the project context with respect to the characteristics of both the natural and built landscapes. Landscape planting design should consider both human use and the environmental processes and characteristics of the entire area influenced by the project. While it is seldom feasible to preserve the natural setting intact, design techniques and careful construction methods can protect and perhaps enhance local environmental and aesthetic values.

CHAPTER 2
LANDSCAPE PLANTING: OBJECTIVES AND ENGINEERING REQUIREMENTS

2-1. Background. In flood damage reduction projects, the goal of landscape planting is to minimize and/or mitigate negative impacts to aesthetic, environmental, and ecological conditions, such that post-project conditions are equal to, or better than, pre-project conditions. Landscape planting objectives include the following: provide cover to prevent dust and erosion; provide ecological benefits, such as improved water quality and wildlife habitat; integrate the flood damage reduction system with the surrounding natural and human environment; separate activities; define zones of use; provide privacy; screen undesirable features or views; accentuate positive features or views; and create a pleasant environment for human use and recreation. These and any other project-specific landscape planting objectives must be consistent with both the policy set forth in Paragraph 1-3 and the engineering requirements detailed in this chapter.

2-2. Vegetation-Free Zone.

a. The vegetation-free zone is a three-dimensional corridor surrounding all levees, floodwalls, embankment dams, and critical appurtenant structures in all flood damage reduction systems. The vegetation-free zone applies to all vegetation except grass. Grass species are permitted, as described in Paragraph 4-8, for the purpose of erosion control.

b. The primary purpose of the vegetation-free zone is to provide a reliable corridor of access to, and along, levees, floodwalls, embankment dams, and appurtenant structures. This corridor must be free of obstructions to assure adequate access by personnel and equipment for surveillance, inspection, maintenance, monitoring, and flood-fighting. In the case of flood-fighting, this access corridor must also provide the unobstructed space needed for the construction of temporary flood-control structures. Access is typically by four-wheel-drive vehicle, but for some purposes, such as maintenance and flood-fighting, access is required for larger equipment, such as tractors, bulldozers, dump trucks, and helicopters. Accessibility is essential to the reliability of flood damage reduction systems.

c. The vegetation-free zone must be wide enough, and tall enough, to accommodate all likely access requirements. The minimum allowable vegetation-free zone dimensions are based on lessons learned from flood-fighting experience and are illustrated in Chapter 6, for a variety of flood damage reduction system configurations. The general rule is as follows:

(1) The minimum height of the corridor shall be 8 feet, measured vertically from any point on the ground.

(2) The minimum width of the corridor shall be the width of the levee, floodwall, or embankment dam, including all critical appurtenant structures, plus 15 feet on each side, measured from the outer edge of the outermost critical structure. In the case of a planting berm (Figures 13, 14, and 15), the 15 feet is measured from the point at which the top surface of the planting berm meets the levee section.

(3) No vegetation, other than approved grasses, may penetrate the vegetation-free zone, with two exceptions, as illustrated in Figure 2:

(a) Tree trunks are measured to their centerline, so one half of the tree trunk may be within the vegetation-free zone.

(b) Newly planted trees, whose crowns can be expected to grow, or be pruned, clear of the vegetation-free zone within 10 years.

d. The minimum vegetation-free zone dimensions may not be diminished without a formal variance (see Paragraph 1-3*b*). Due to specific site conditions and project requirements, many levees, floodwalls, embankment dams, and appurtenant structures will be determined, by the project design team, to require a vegetation-free zone larger than the minimum described here.

e. Paragraph 2-2 has established the minimum acceptable width of the vegetation-free zone at 15 feet. Other than by variance, as described above, the single exception to this 15-foot minimum requirement arises in the case of an existing project where the width of the existing real estate interest for the project is less than 15 feet. In such a case, the vegetation-free zone width shall be the maximum attainable within the existing real estate interest.

2-3. Vegetation-Management Zone. A recommended alternative to enlarging the vegetation-free zone is the addition of an adjacent *vegetation-management zone* (see Figure 22). A vegetation-management zone provides greater opportunity to include vegetation by reserving the option to manage it selectively, as needed. Two of many possible scenarios are presented below.

a. Several trees, just outside the vegetation-free zone, are inhibiting grass growth, through light deprivation and/or the production of their own natural herbicides that limit competition for moisture and nutrients. These trees should be either removed or modified, as appropriate, to assure that grasses thrive and continue to provide effective erosion control.

b. A large tree, outside the vegetation-free zone, becomes a *hazard tree* when its root system is severely damaged by construction activity, thereby increasing its susceptibility to windthrow and the associated risk of damage to a floodwall. This tree should be removed.

2-4. Root Impacts. As stated in Paragraph 2-2, the primary purpose of the vegetation-free zone is access. However, it also serves a secondary purpose: it provides distance between root systems and levees, floodwalls, embankment dams, and appurtenant structures, thereby moderating reliability risks associated with the following two situations: potential piping and seepage due to root penetration; and structural damage (a hole in the ground, surrounded by an area of disturbed earth) resulting from a wind-driven tree overturning. Though not adequate for all situations, this 15-foot zone does provide a measure of risk reduction, as follows:

a. Root size and numbers diminish with distance from the tree trunk.

b. The hole and its surrounding area of disturbed earth, created by a tree overturning, typically has a radius ranging from 6 to 12 feet. This secondary effect of the vegetation-free

zone is important to the reliability of flood damage reduction systems; it is not a root-free zone but it is a zone of reduced root impact.

2-5. Root-Free Zone. Planting design must consider the possible implications to foundation strength and performance. The integrity of the foundation could be compromised if potential seepage paths were created by root penetration and/or root decay. The root-free zone provides a margin of safety between the greatest expected extent of plant roots and the beginning face of any structure that is critical to the performance and reliability of the flood damage reduction system. The list of such structures includes levees, floodwalls, embankment dams, seepage berms, seepage drains, toe drains, pressure relief wells, and cut-off trenches. These critical structures must be root-free, as illustrated in Figures 13, 14, 15, 17, and 19. The rooting habit of each plant selected for use near a root-free zone must be predictably understood with respect to its potential to invade the root-free zone and compromise the reliability of the flood damage reduction system. Landscape planting plans will reflect full recognition of the importance of selecting appropriate plant species and varieties. Root barriers may be used to provide an added measure of assurance, but they should not be a substitute for adequate distance between plantings and root-free zones. Root barriers shall not retard groundwater or seepage flow. Some root barriers include herbicides to enhance effectiveness; in every case, these shall be evaluated prior to use to assure against negative environmental impacts.

2-6. Water-Current and Wave-Action Barrier. The use of suitable vegetation, such as shrub forms of *Salix* (willow), riverward of the vegetation-free zone is encouraged as an environmentally beneficial means to moderate the erosive potential of water currents and wave action.

CHAPTER 3
TREATMENT OF LEVEES, FLOODWALLS, EMBANKMENT DAMS, AND APPURTENANT STRUCTURES

3-1. General.

a. The integrity of levees, floodwalls, embankment dams, and appurtenant structures is paramount to the public health, safety, and welfare. The presence of undesirable vegetation can undermine that integrity and lead to failure if not corrected.

b. Trees and other woody vegetation, such as shrubs and vines, can create both structural and seepage instabilities, prevent adequate inspection, and create obstacles to maintenance and flood-fighting/flood-control activities. Vegetation must be controlled for the following reasons:

(1) To allow proper inspection, surveillance, and monitoring of all structures and adjacent areas for seepage, cracking, sinkholes, settlement, displacement, and other signs of distress.

(2) To allow access for normal and emergency Operations and Maintenance activities.

(3) To prevent root-related damage to structures, such as shortened seepage paths through embankments and/or foundations; voids in embankments and/or foundations due to decayed roots or fallen trees; clogged seepage collector systems; and expansion of cracks or joints in concrete walls, spillway floors, and canal linings.

(4) To limit those habitat characteristics that encourage the creation of animal burrows.

(5) To allow full design-discharge capability of waterways, spillway inlet and outlet channels, outlet-works discharge channels, and other open conveyance channels.

(6) To avoid any incidental growth and subsequent presence of endangered species that might prohibit activities necessary for operations, maintenance, or access.

c. This document establishes minimum dimensions for both vegetation-free zones and root-free zones; however, for any specific project, those minimum dimensions may be increased by levee and/or dam-safety engineering personnel due to site-specific considerations such as topography, phreatic surfaces within the structure and abutments, geological features, historical embankment and/or foundation seepage or issues, stability issues, and foundation characteristics.

3-2. Levees.

a. Levees are usually constructed of compacted earth fill. In some cases, internal drainage or under-seepage treatment is incorporated into the levee. When a planting berm is used to allow vegetation nearer to the levee centerline, the internal blanket drain and/or toe drain must be extended, as shown in Figures 14 and 15. Any such extension must be assessed by the design team for impact to the seepage control system.

b. All levees must have effective and reliable erosion protection; the appropriate use of grasses is described in Paragraph 4-8. Where opportunities exist, environmental improvements should be considered. Project design shall address the following criteria:

(1) Urban levees. Because levee projects have the potential to dominate these high-visibility landscapes, planting is often desirable, particularly in high-visibility locations, such as at and along major thoroughfares, parks, and waterfront developments.

(2) Rural or agricultural levees. Although these are typically not high-visibility areas, both human use and environmental needs should be considered during design. Plantings are particularly appropriate for the following areas, provided they are consistent with site-specific engineering requirements: high-visibility pumping installations, public road crossings, near residences, and at other project locations where landscape plantings could protect or restore valued environmental characteristics.

c. Minimum vegetation-free and minimum root-free zones are established for levees, as illustrated in Chapter 6.

3-3. Floodwalls.

a. Floodwalls are most often used in urban areas, where land or access is constrained. These walls are subject to hydraulic forces on one side, which may be resisted by little or no earth-loading forces on the other side. Landscape planting should be addressed in floodwall design, particularly where walls encroach on, or change, existing scenic values, e.g., where the wall becomes a visual barrier along a street or near dwellings, parks, and existing or anticipated commercial developments.

b. The minimum vegetation-free zone provides for access, but there are two additional areas of concern with respect to floodwalls.

(1) Large trees can be a threat to project reliability. Planting design and maintenance must take into account the potential for overturning trees to damage floodwalls. The following factors can be used, alone or in combination, to limit potential for such damage:

(a) Distance between a tree and the wall.

(b) Tree species selection, favoring trees with a low potential for breaking and overturning.

(c) Tree monitoring and maintenance to address hazard trees.

(d) Intervening obstacles, such as other trees, that would reliably restrain a falling tree. Where other factors are unreliable, the distance between a tree and the wall must be adequate: e.g. a minimum distance of one-half of the mature tree height.

(2) Planting design and maintenance must also take into account the three potential means by which tree roots may damage floodwalls:

(a) Large tree roots can damage concrete structures by jacking (lifting) them, which can cause cracking and separation at joints. Further, if a floodwall is lifted, a seepage path could form along the structure/foundation contact. Smaller (lighter) floodwalls are more susceptible than larger (heavier) structures.

(b) Roots may also grow into and through wall joints, loosening and eroding wall-joint seals, thus damaging the water-proof characteristics.

(c) A floodwall may have a toe drainage system to check and control piping and boils; to control seepage that may result from roofing, where piles are used; and to control uplift pressures. These drainage systems must be protected from invasion by roots, which could clog them.

c. Although there are several types of floodwalls, the two most common are the inverted-T type reinforced concrete wall and the cantilever-I type sheet piling wall. The vegetation impact concerns are similar for both types. For all the reasons cited above, minimum vegetation-free and minimum root-free zones are established for floodwalls, as illustrated in Figures 16–19.

3-4. Embankment Dams and Appurtenant Structures.

a. Purpose. "Tree and woody-vegetation penetrations of earthen dams and their appurtenances have been demonstrated to cause serious structural deterioration and distress that can result in failure of earthen dams" (Association of State Dam Safety Officials 2002). Proper establishment and control of vegetation is critical to dam safety. This Paragraph establishes minimum requirements for landscape planting and vegetation management at embankment dams (earth fill, rock fill, or earth and rock fill), including multipurpose projects with both concrete and embankment dam structures (wing dams) and perimeter saddle dams (dikes); abutments; and appurtenances, such as spillways, outlet works, and inlet and/or outlet channels.

b. Policy. The following five areas are vegetation-free zones:

(1) The dam or the dam-toe area.

(2) In or around seepage monitoring systems or critical downstream areas where seepage observation must be vigilant and continuous.

(3) Groin abutments and areas immediately adjacent.

(4) Spillways and spillway channels, including spillway slopes and approaches to spillways where vegetation could, in any way, impede the efficient operation of the spillway.

(5) The outlet-works discharge channel.

c. Vegetation-Free Zones. Vegetation-free zones shall, when dry, be mowed to a height of 3–6 inches at any time the grass reaches a height of 12 inches. Mowing shall be triggered by grass heights of less than 12 inches if important to the health maintenance of the particular grass

species. The maximum height of grasses shall be 12 inches. The minimum vegetation-free zone requirements for specific structures are described below.

(1) Embankment Dams. At a minimum, for "dry" reservoirs, the entire dam embankment surface, including upstream impervious blankets and the upstream and downstream areas within 50 feet of the embankment toe, shall be a vegetation-free zone (see Figure 20). For "normal pool" conditions, the entire embankment surface from the upstream toe of the dam or from the upstream limit of the impervious blanket, as applicable, to a minimum distance of 50 feet from the downstream toe shall be a vegetation-free zone (see Figure 21).

(2) Dam Abutments. The dam abutment is defined as the part of a natural valley side-wall against which a dam is constructed. At a minimum, the vegetation-free zone shall extend for a horizontal distance of 15 feet beyond the embankment/abutment contact line (i.e. groin).

(3) Spillways. The safety of embankment dams requires the unobstructed operation of spillways. The minimum vegetation-free zone shall include the spillways and spillway channels, including spillway slopes and approaches.

(4) Outlet-Works Discharge Channels. The minimum vegetation-free zone shall include the entire outlet channel, outlet structure headwalls and wingwalls, and surrounding areas to a distance of 50 feet from the top of the bank of the outlet channel.

CHAPTER 4
DESIGN CONSIDERATIONS

4-1. Feasibility Analysis. During design, an analysis shall be made of the flood damage reduction system to determine if and where landscape planting can be permitted. Not all projects will have a satisfactory combination of conditions to permit planting of trees, shrubs, vines, forbs, and grasses. In some cases, only shrub planting may be feasible, while in other cases planting may be limited to grasses. Site conditions, engineering design criteria, and operation and maintenance requirements should determine the appropriate planting scheme. However, environmental objectives shall be considered in all projects, and the engineering design should seek to accommodate appropriate plantings. Some important site considerations are described below.

a. Types of Construction Material. The type of construction material is an important factor in determining suitability for landscape planting. Rock, sand, and many types of compacted clay embankments are examples of poor plant-growing media. The roots of some plant species, under some conditions, may penetrate a great distance into a sand levee, potentially providing a path for piping through the structure. Plants must be selected very carefully with regard to the type of construction materials used to ensure survival of the plant and prevent damage to the structure.

b. Project Alignment. Project alignment can be a complex exercise involving multiple, often conflicting criteria and requiring a coordinated effort by the project delivery team. The role of the landscape architect is to identify opportunities and constraints to human use relative to project alignment. For example, in an urban area, a relatively minor adjustment to a proposed alignment might allow for plant screening between residences and the structure or provide space for a park or other community green space. Often, those segments of the alignment that are otherwise arbitrary may be turned to advantage with respect to human use.

c. Environmental Factors. The types of vegetation suited to a site are a function of a number of environmental factors. Local climate (precipitation, temperature, dates of earliest and last frost, etc.) can limit the types of vegetation that survive in a particular region. Soil type, pH, nutrient character, exposure to sunlight, flood and drought duration, and depth to groundwater are additional conditions that can influence the potential for a site to support vegetation. Because one important functional characteristic of vegetative groundcovers is the ability to provide erosion control, it is necessary to confirm that the proposed cover can withstand the energy environment under flood conditions. This may require an assessment of local velocities and shear stresses and comparison of predicted values under flood conditions against thresholds for various types of vegetation.

4-2. Planting Berms.

a. Beyond the minimum section needed to satisfy stability requirements, it is sometimes desirable to add additional earth fill to a levee or embankment dam to create a planting berm, in order to better accommodate differing types of public use and related landscape planting approaches (see Figures 13, 14, and 15). The appropriate dimensions of the planting berm

should be determined by the landscape architect in consultation with the design team. Additional rights-of-way may be necessary to accommodate the additional fill material and flatter slopes. Except in approved planters, vegetation is not permitted on any overbuild that has a system-reliability function. Planting berms may be considered for use on the land side only.

b. Planting layout and plant material characteristics shall be coordinated with the design team to assure adequate access between the levee crown and the toe for two purposes: visual access is required for inspection of the toe area; and physical access is required for flood-fighting activities involving personnel and heavy equipment. In all cases, the planting berm must be of sufficient depth to accommodate any proposed vegetation while precluding root penetration into any root-free zone. Design must include adequate consideration of any internal drainage or seepage control system (see Figures 14 and 15).

c. Additional design requirements for planting berms include the following. For new projects, engineering and design shall be in accordance with ER 1110-2-1150, *Engineering and Design for Civil Works Projects*, and all related guidance. For existing projects, engineering and design shall be in accordance with CECW-PB memorandum dated 23 Oct 2006, *Policy and Procedural Guidance for the Approval of Modification and Alteration of Corps of Engineers Projects*.

4-3. Planters.

a. In overbuild areas, permanent plant containers, such as concrete planters, may be considered. Planters must not impact the designed dam or levee section, or appurtenant structures, such as berms, drains, ditches and wells. Planter design and layout must allow for adequate access up and down the embankment as required for inspection and flood-fighting activities and must be approved by the Dam or Levee Safety Officer.

b. Planters and containerized plants should be used selectively and should be considered only when normal planting is not practical. The initial cost and the ability of the sponsor to maintain this type of planting should be considered during design. Plants selected for use in planters should have mature heights of not more than approximately 20 feet.

4-4. Irrigation Systems. Irrigation systems within the vegetation-free zone pose two potential threats to system reliability: pressurized waterlines may fail, resulting in damage to the engineered embankment section; and irrigation water may impair visual inspection by obscuring wet areas that are actually due to seepage. Any irrigation system that targets the vegetation-free zone shall be engineered so as to address these issues and meet the approval of the District dam or levee safety officer. Designs may include features such as double-walled piping and leakage detection systems.

4-5. Flood-Fighting and Structure Maintenance. Flood-fighting and maintenance operations for levees, floodwalls, embankment dams, and appurtenant structures can be complex. These operations must not be impacted by the layout and physical characteristics of landscape plantings. Landscape plantings will be designed to permit inspection of structures from moving vehicles. Access requirements for emergency repair and replacement associated with flood-fighting efforts shall also be considered.

4-6. Maintenance of Plantings. Planting designs must be consistent with the capacity of the project sponsor to maintain them. Maintenance shall include the control and/or removal of invasive species. Low-maintenance plant materials are often the most appropriate choice.

4-7. Selection of Plant Material. Plants will be selected from approved plant lists prepared jointly by Division and District landscape architects in conjunction with the local sponsor or resource agencies. The list will include trees, shrubs, vines, forbs, sedges, and grasses that are native to the region and well adapted to the climactic, soil, and hydrologic conditions of the site. Plant lists should be appropriate to the specific structural conditions and requirements of each project. As the project site experiences fluctuations in various environmental conditions over time, such as water level, precipitation, and herbivory, some plants or species will not survive but others may thrive. A diverse array of plant species is essential to a riparian system's resiliency and its ability to provide and sustain a number of functions. A botanist familiar with local flora should be enlisted to select those species from the approved list most likely to meet project objectives.

4-8. Appropriate Ground Cover in the Vegetation-Free Zone.

a. The only acceptable vegetative ground cover in the vegetation-free zone shall be perennial grasses. Their primary function shall be to reliably protect against erosion. They shall be maintained as necessary to ensure the health and vigor of the primary species providing erosion protection. The species selected for each project shall be appropriate to the local climate, conditions, and surrounding or adjacent land uses. Preference should be given to the use of native species. Invasive or weed species shall not be acceptable. The species selected must be able to tolerate mowing to heights as low as 3 inches, as follows: at least once each year for inspection; and in anticipation of flood conditions and associated monitoring and flood-fighting activities.

b. If the local climate, hydraulic and hydrologic environment, soils, or other conditions will not support such grass species, then non-vegetative means of erosion control shall be employed, e.g. riprap, pavement, articulating concrete mats, or other engineered surface.

c. A maximum grass height is specified for embankment dams and their appurtenant structures (see Paragraph 3-4*c*, Vegetation-Free Zones).

4-9. Borrow Sites and Spoil Sites. Borrow sites and spoil sites shall be restored through proper regrading and revegetation.

CHAPTER 5
VEGETATION-RELATED MAINTENANCE AND REPAIR

5-1. Maintenance of Ground Cover. As ground cover in a flood damage reduction system, the primary purpose of grasses is the effective prevention of erosion; therefore, maintenance must assure a healthy, vigorous stand that is substantially free of weeds and bare spots. It will generally be necessary to periodically mow, graze, or burn grasses to permit proper inspection, manage pests, inhibit weed growth, or otherwise maintain the health and vigor of the plant stand. The appropriate time of year in which to conduct these maintenance activities will be a function of the species utilized as well as the motivating factor for the maintenance activity. For example, mowing to prohibit weed establishment may best be undertaken before the weed seeds become viable each year. The annual inspection may be scheduled to coincide with this period.

5-2. Operations and Maintenance Manual. For each project, it is important that the operations and maintenance manual include an annual maintenance program to control animal burrows and vegetative growth. It is also important that vegetation be managed in such a manner as to avoid the need for mechanized removal and associated embankment repair, and avoid any incidental growth and subsequent presence of endangered species that might prohibit access and activities necessary for operations or maintenance.

5-3. Removal of Non-Compliant Vegetation.

a. All vegetation not in compliance with this ETL shall be removed. A detailed removal plan shall be submitted to the local USACE District Levee Safety Officer for review and comment prior to removal of vegetation. The removal plan shall expand on the following basic requirements.

(1) By excavation, remove the trunk (or stem), stump, rootball and all roots greater than 1/2 inch in diameter – all such roots in, or within 15 feet of, the flood damage reduction structure shall be completely removed.

(2) Assure that the resulting void is free of organic debris.

(3) Fill and compact the void according to the original soil and compaction specifications: or, if no specifications exist, match adjacent soil and compaction.

b. Removal of non-compliant vegetation can create significant issues for the owner/operator, as maintenance may require environmental permits. The local sponsor must coordinate with the Corps and other appropriate agencies and obtain all the required environmental permits (including Corps of Engineers 404 permits) before conducting work within the levees. Mechanized land clearing below the plane of the "Ordinary High Water Mark" (defined at 33 CFR Part 328.3(e); in this document, see Figure 23 in Chapter 6 and the glossary in Chapter 7) will normally require Clean Water Act permits before work can commence. In regions with endangered or threatened species, and/or their critical habitat, vegetation removal of any kind may require clearance through the U.S. Fish and Wildlife Service or the National Marine Fisheries Service under the Endangered Species Act.

5-4. Repair of Animal Burrows. For proper procedures for the repair of animal burrows, refer to the latest edition of FEMA publication 473, *Technical Manual for Dam Owners, Impacts of Animals on Earthen Dams*.

CHAPTER 6
ILLUSTRATIONS

6-1. General.

a. The figures presented here are cross-sections and are organized as follows. Figure 1 illustrates the minimum vegetation-free zone required for a basic levee section and serves as an introductory example for use in Figure 2. Figure 2 illustrates the proper application of the vegetation-free zone with regard to various vegetation types and stages of development. Figures 3 through 23 provide additional examples, illustrating the minimum vegetation-free zone required for each of various flood damage reduction system configurations. Root-free zones are indicated in Figures 13, 14, 15, 17, and 19. Vegetation-free zone requirements for embankment dams and their appurtenant structures are illustrated in Figures 20 and 21 and are presented in greater detail in Paragraph 3-4. Figure 22 illustrates the vegetation-management zone. Figure 23 illustrates a levee section with the ordinary high water mark above the riverside toe.

b. For clarity, Figures 1 through 23 are not drawn to scale; however, Figures 24 and 25 are drawn to scale, using trees in the medium to large size range. The purpose of these two proportionally correct figures is to clearly illustrate realistic spatial relationships between trees (and their root systems) and levees.

c. Note that the minimum vegetation-free zone is not influenced by the type of erosion protection used, so figures are not specific in that regard, e.g., riprap is not shown.

6-2. Figures 1 through 25

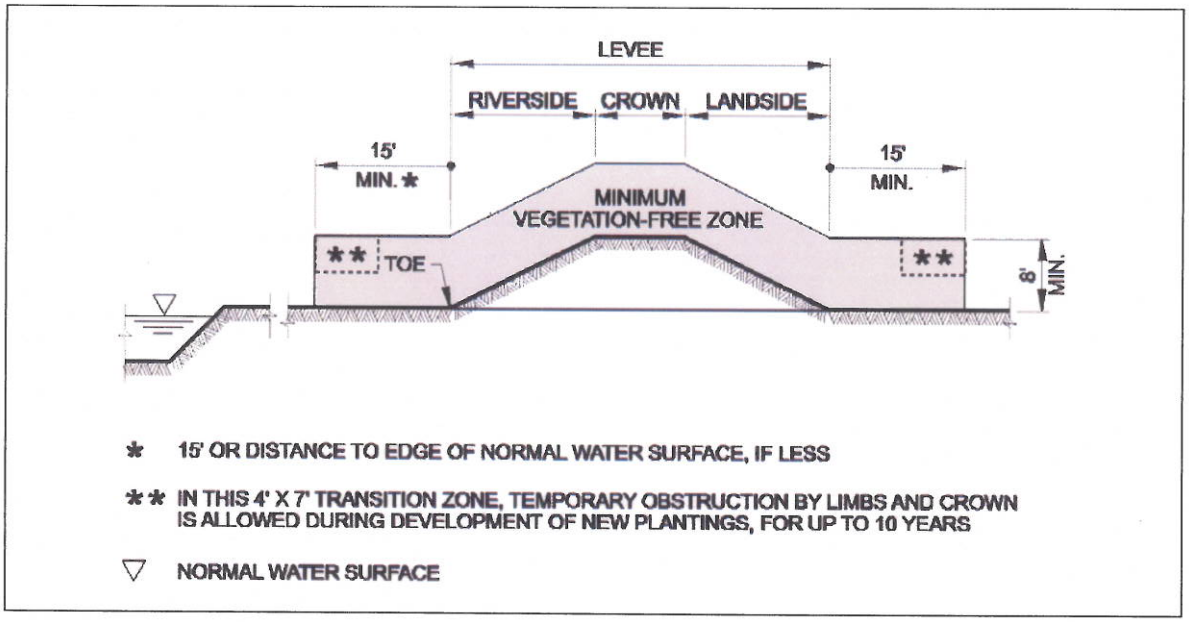


Figure 1: Levee Section – Basic.

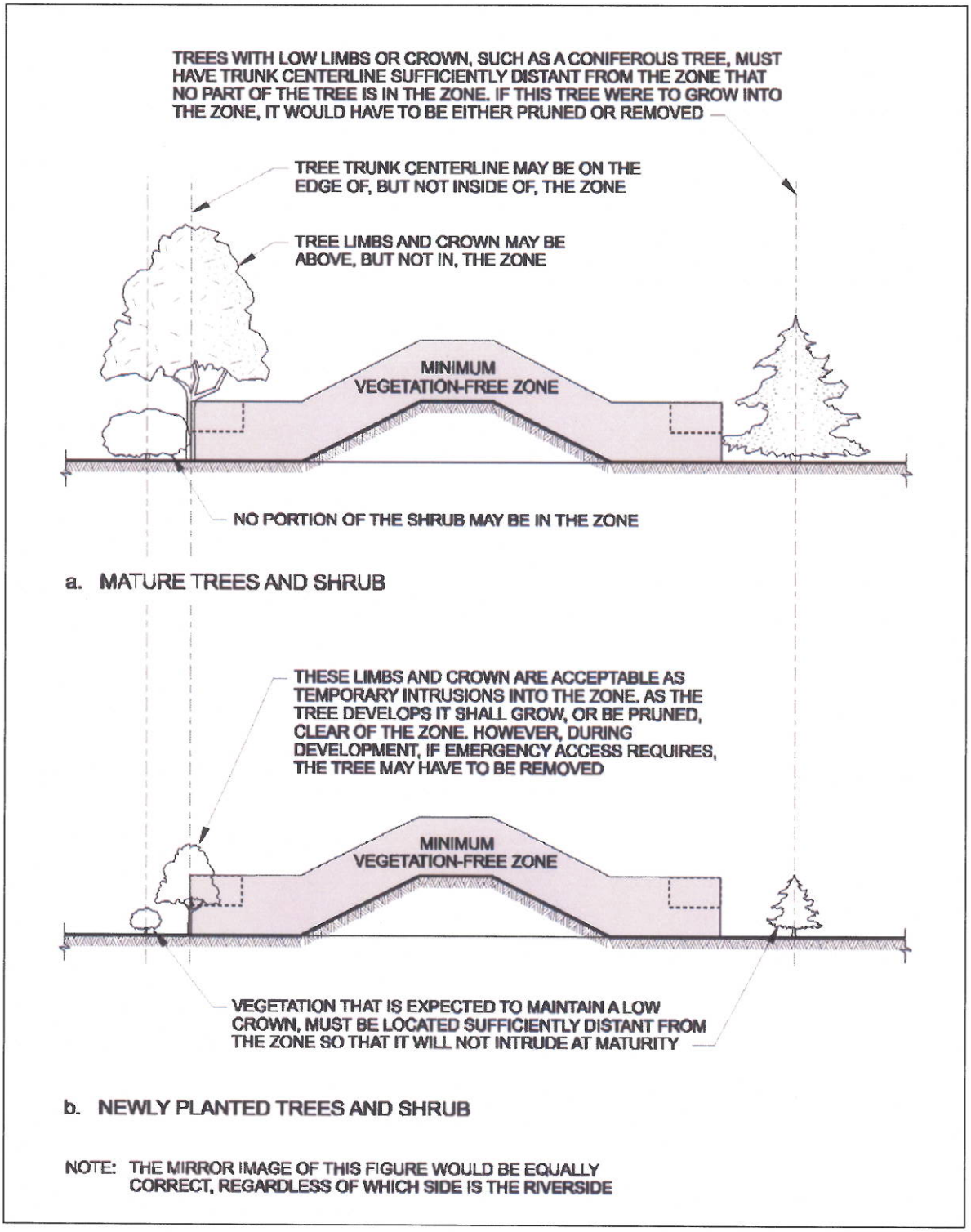


Figure 2: Proper Application of the Vegetation-Free Zone.

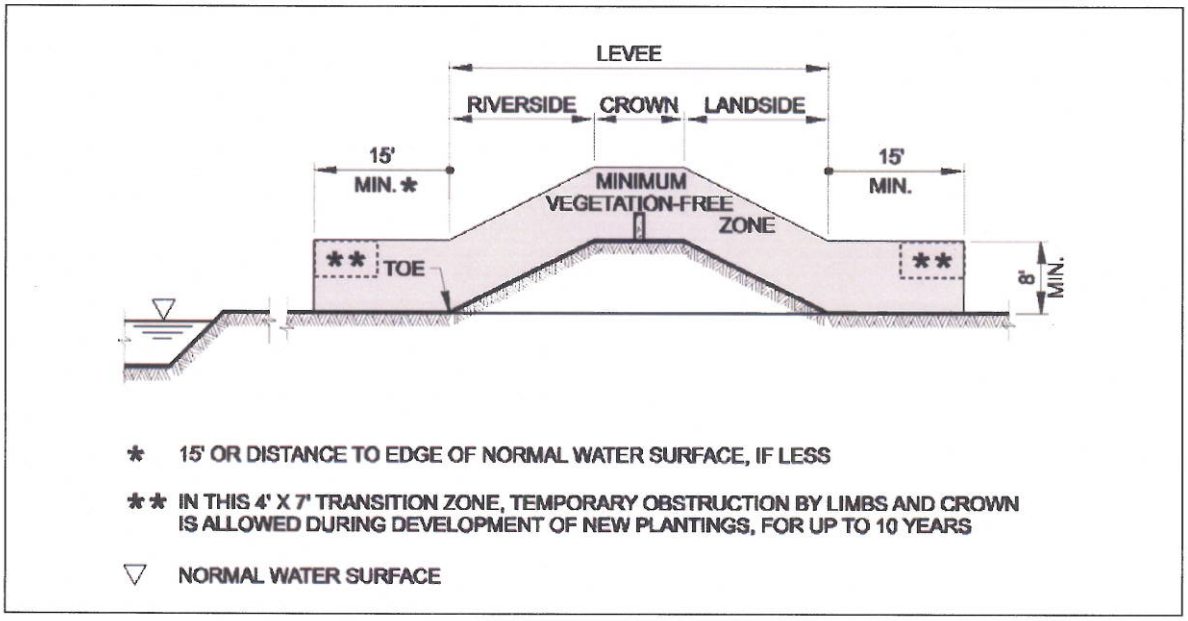


Figure 3: Levee Section – Basic, with Floodwall on Crown.

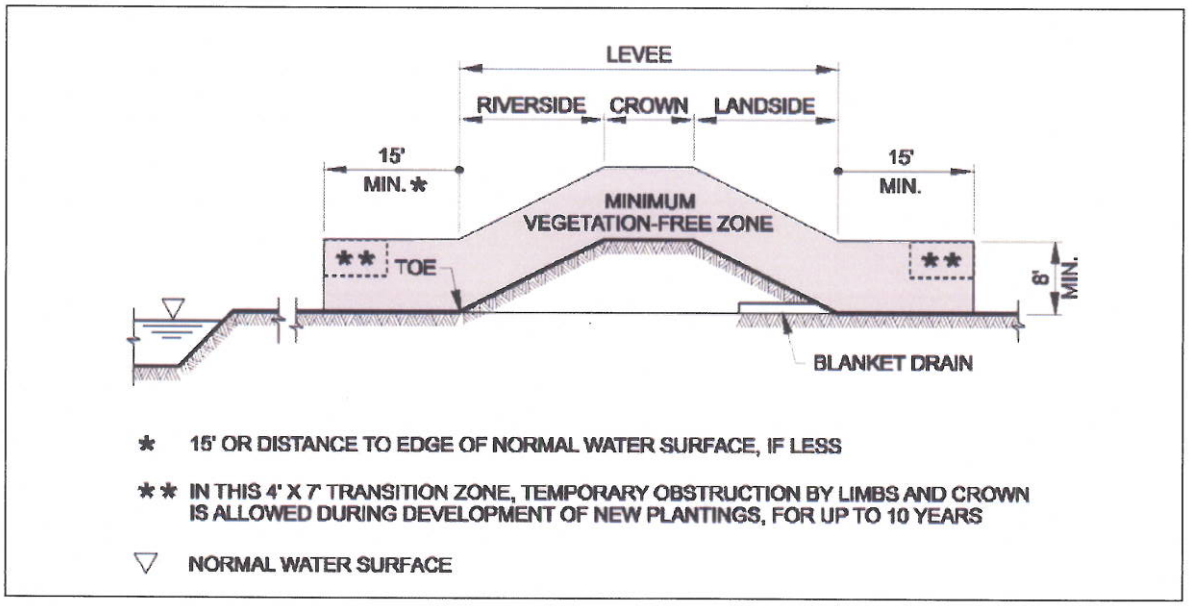


Figure 4: Levee Section with Blanket Drain.

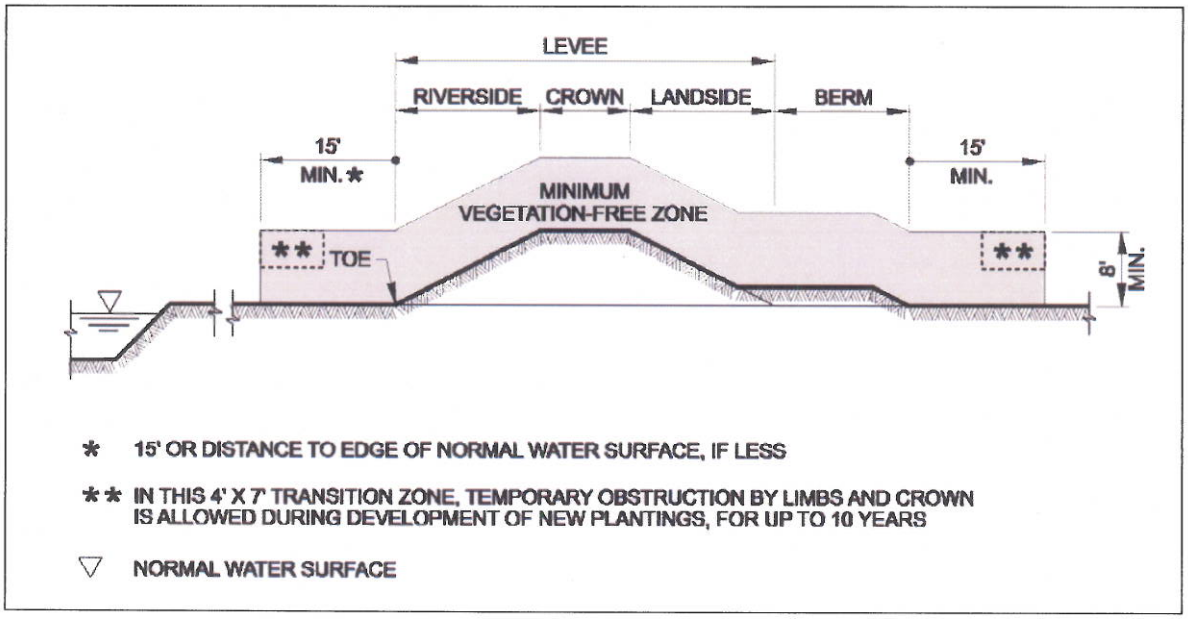


Figure 5: Levee Section with Seepage or Stability Berm.

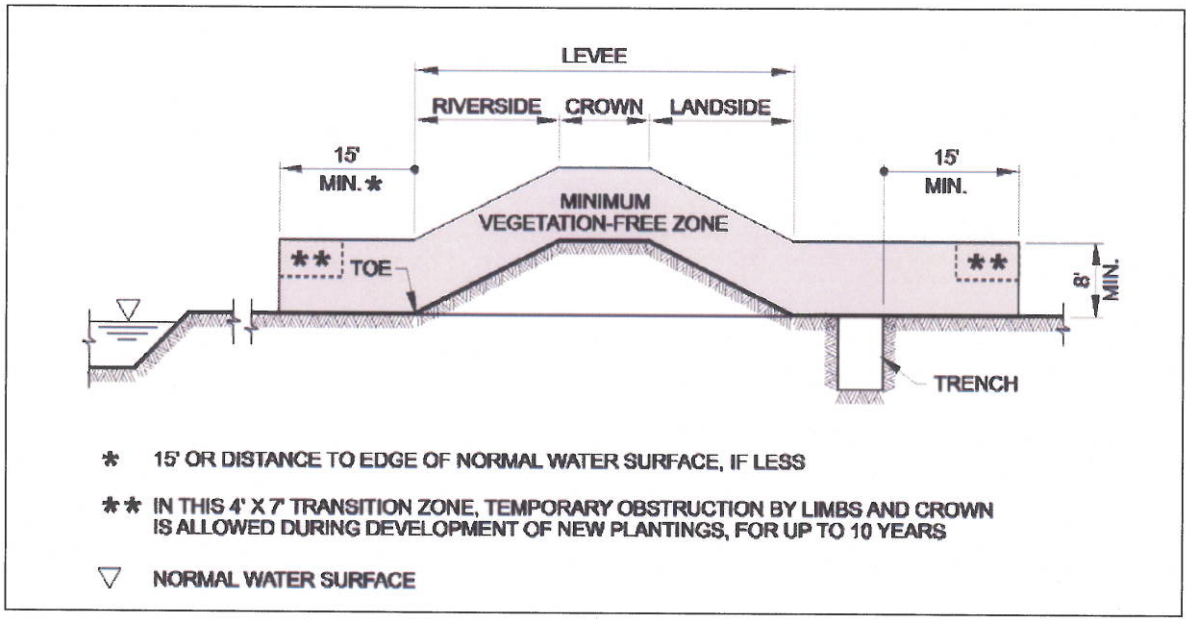


Figure 6: Levee Section with Pervious Toe Trench.

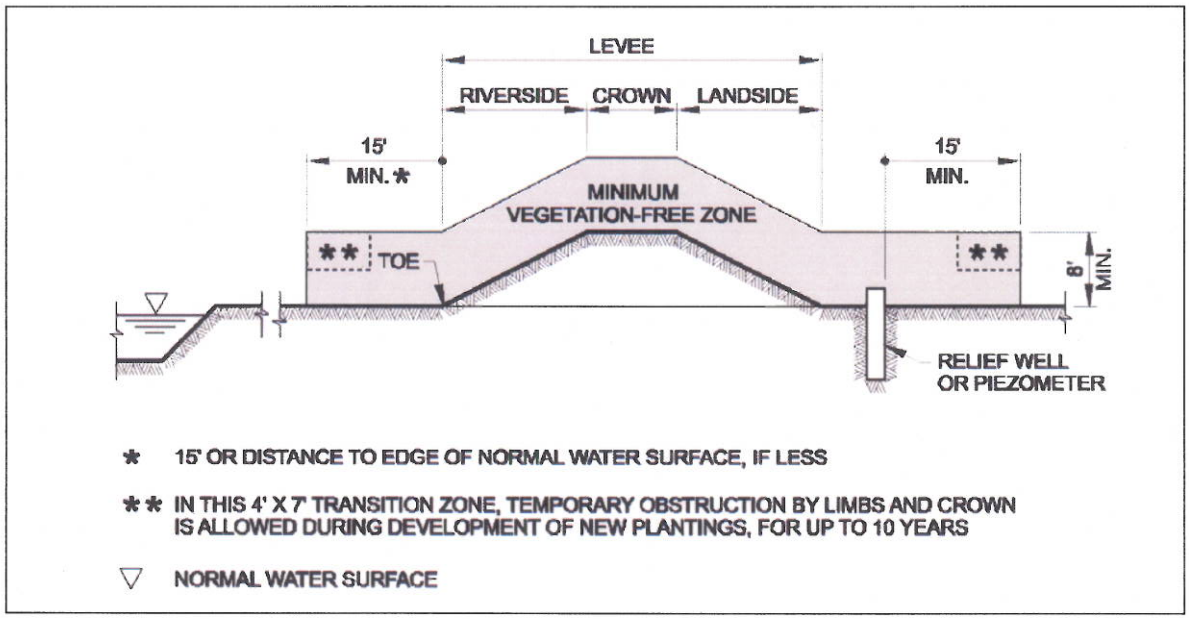


Figure 7: Levee Section with Relief Well or Piezometer.

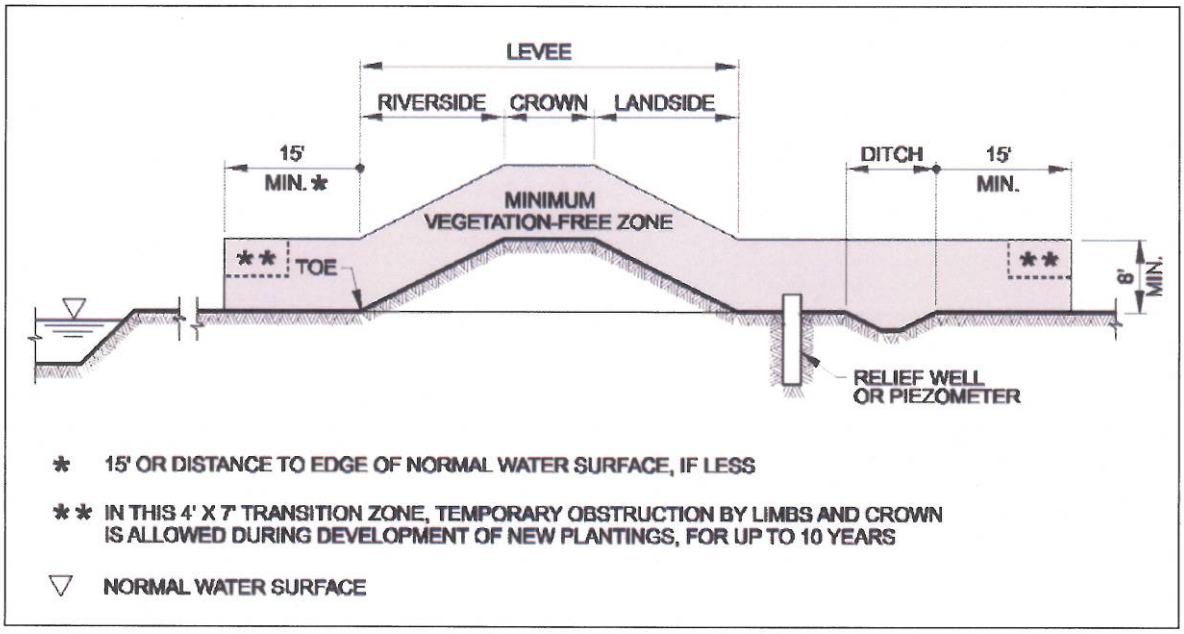


Figure 8: Levee Section with Relief Well or Piezometer and Seepage Collector Ditch.

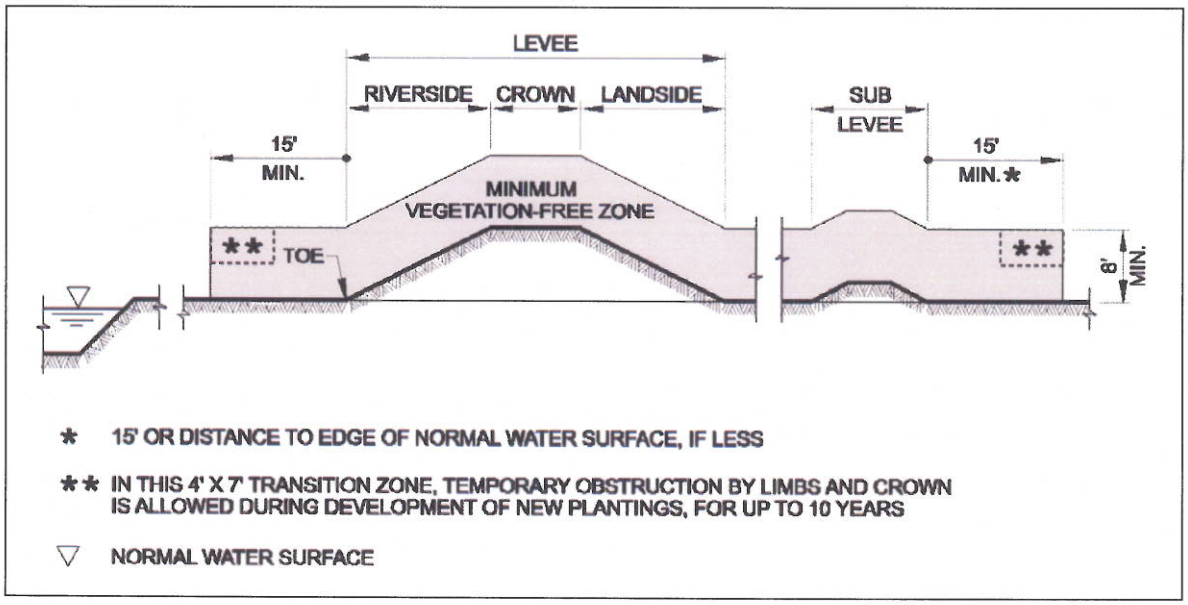


Figure 9: Levee Section with Sub-Levee.

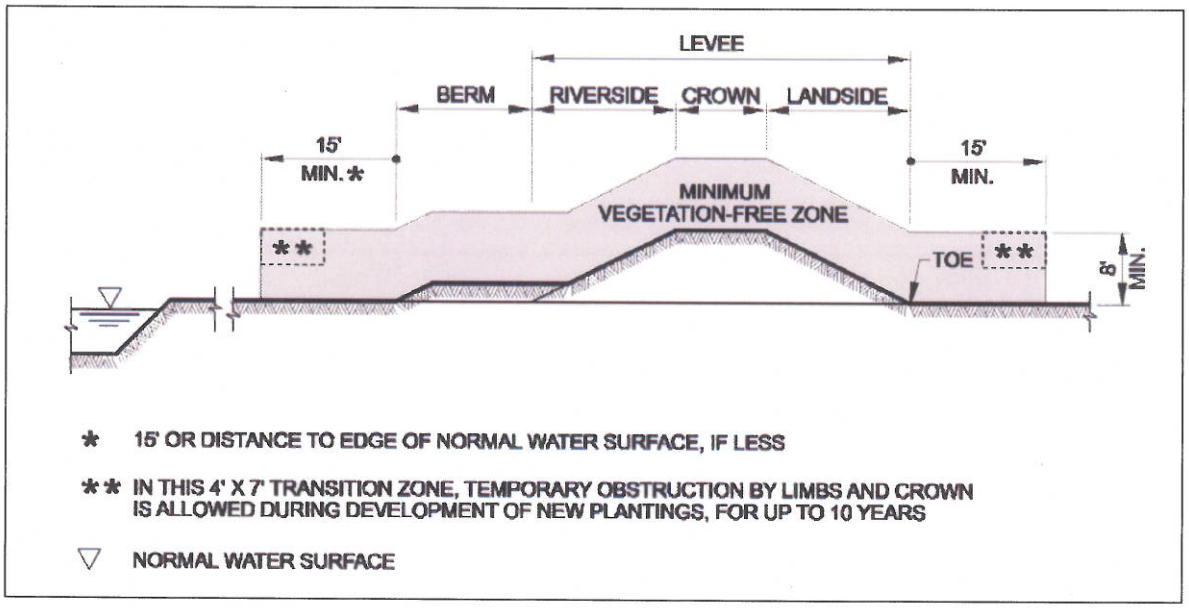


Figure 10: Levee Section with Stability Berm.

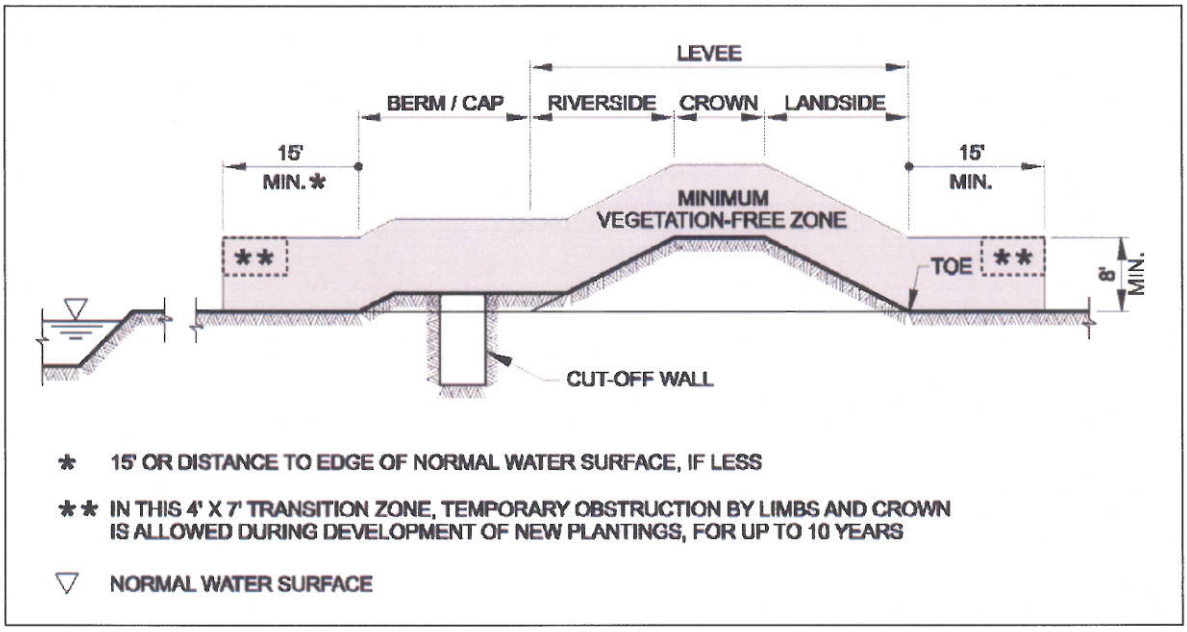


Figure 11: Levee Section with Cut-Off Wall and Impervious Berm.

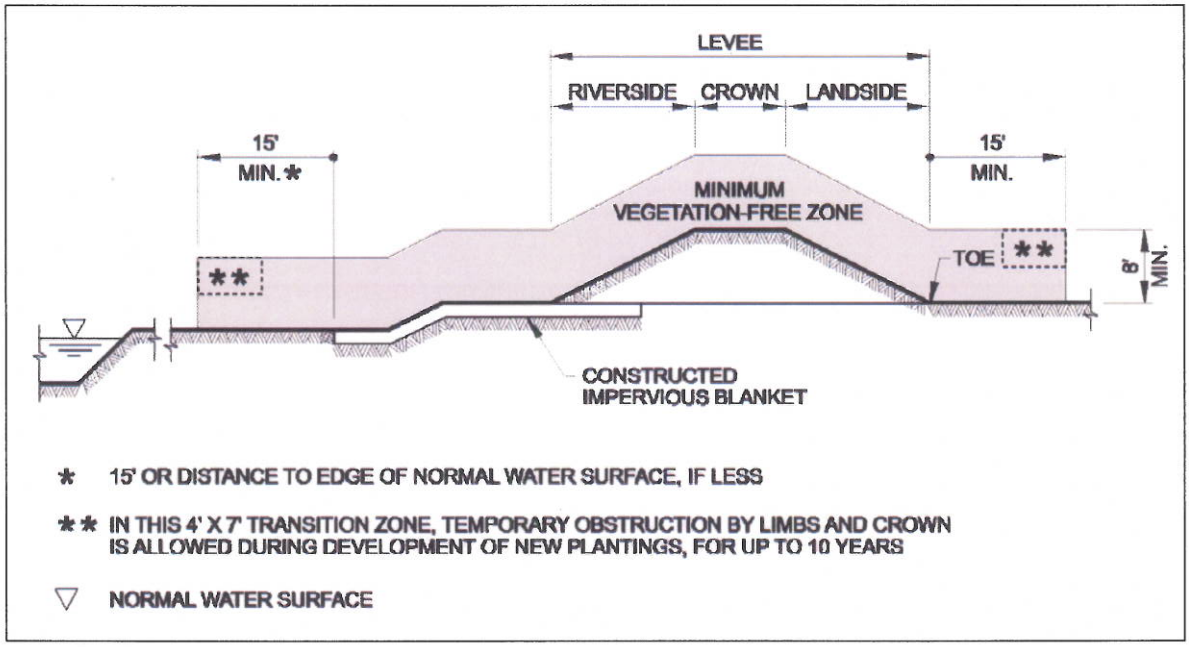


Figure 12: Levee Section with Constructed Impervious Blanket.

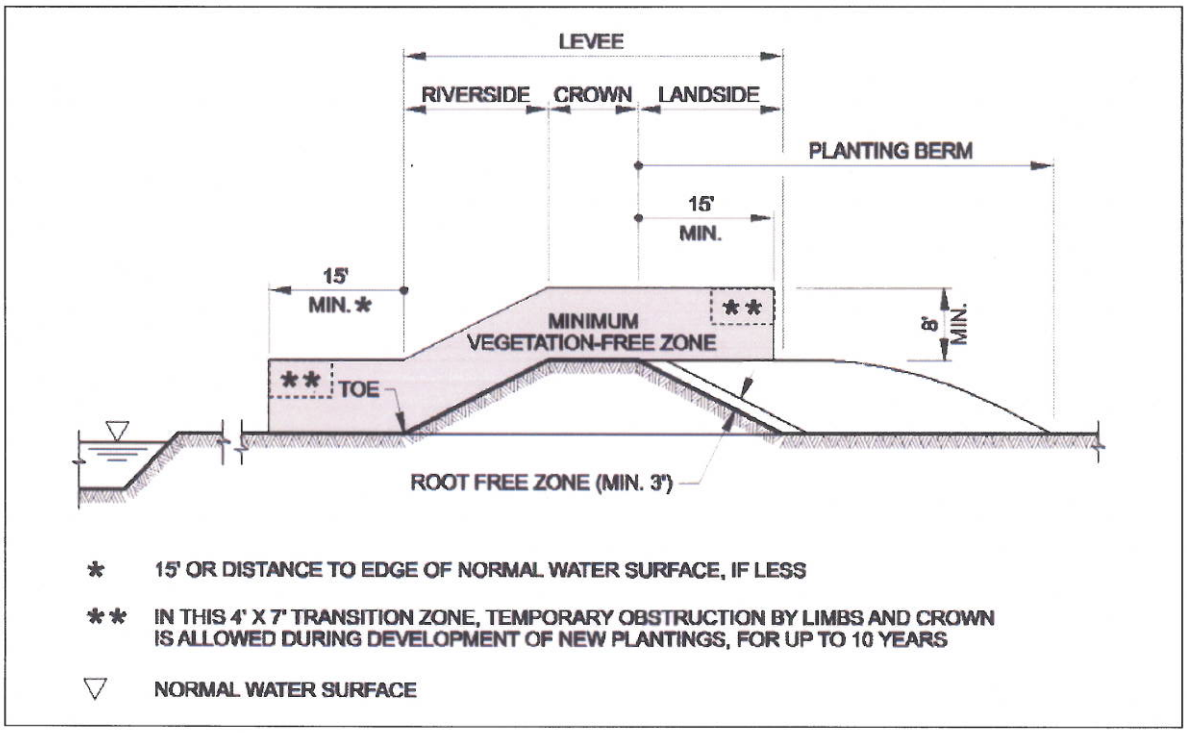


Figure 13: Levee Section with Planting Berm.

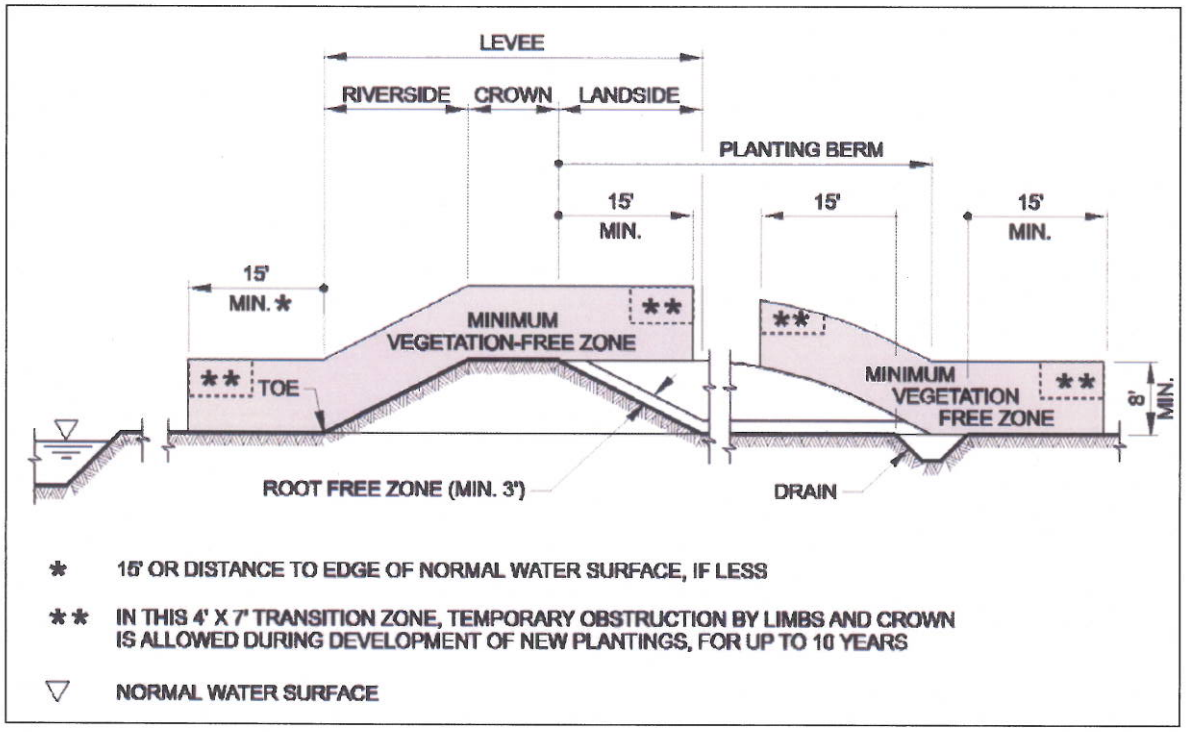


Figure 14: Levee Section with Planting Berm and Collector Drain.

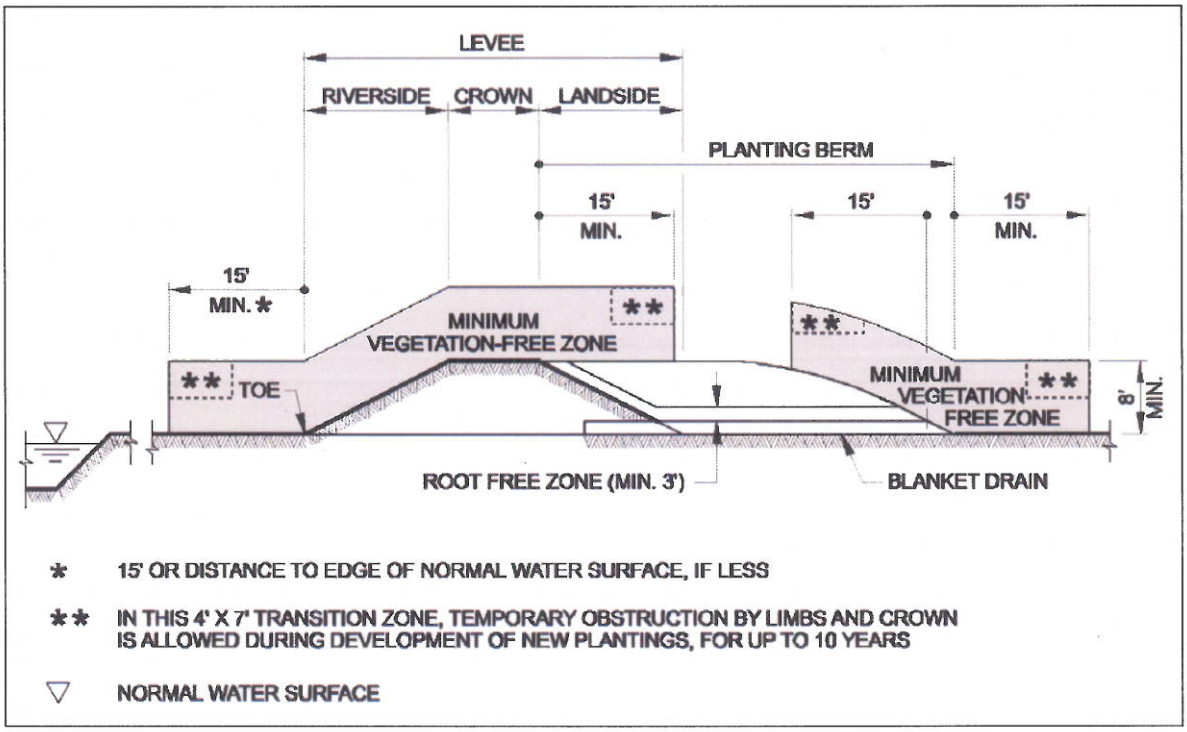


Figure 15: Levee Section with Planting Berm and Blanket Drain.

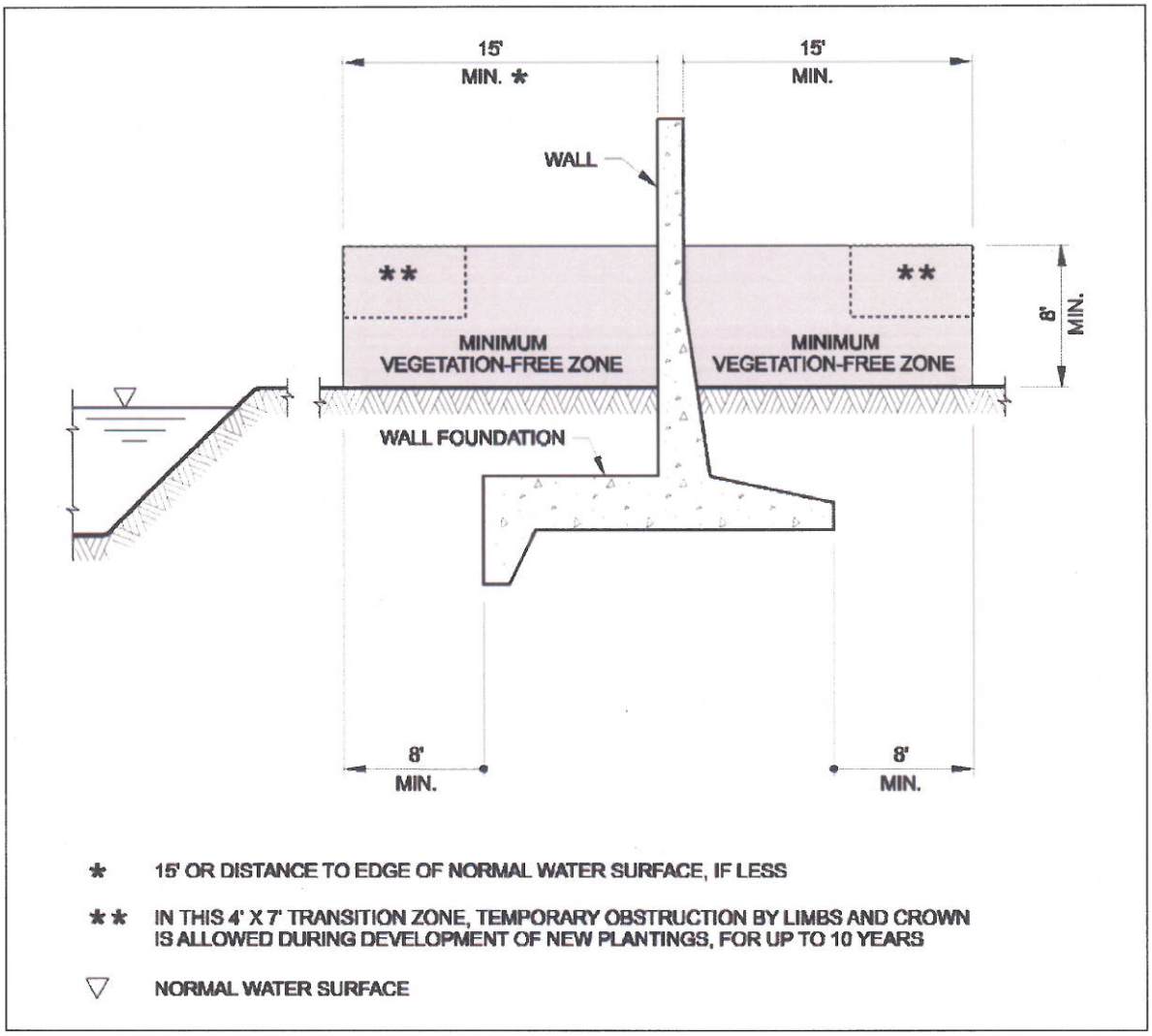


Figure 16: Inverted-T Type Floodwall.

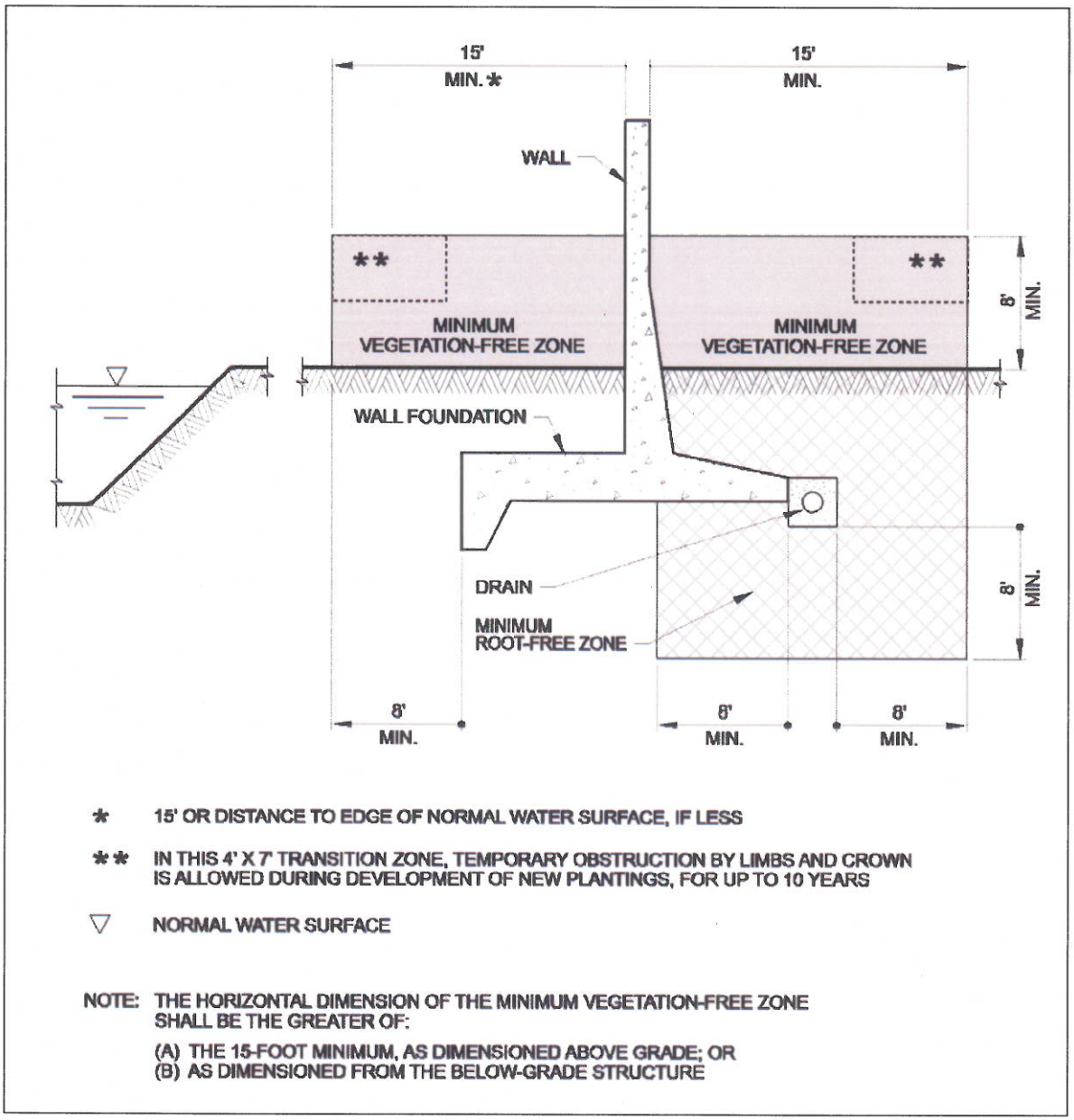


Figure 17: Inverted-T Type Floodwall with Drain.

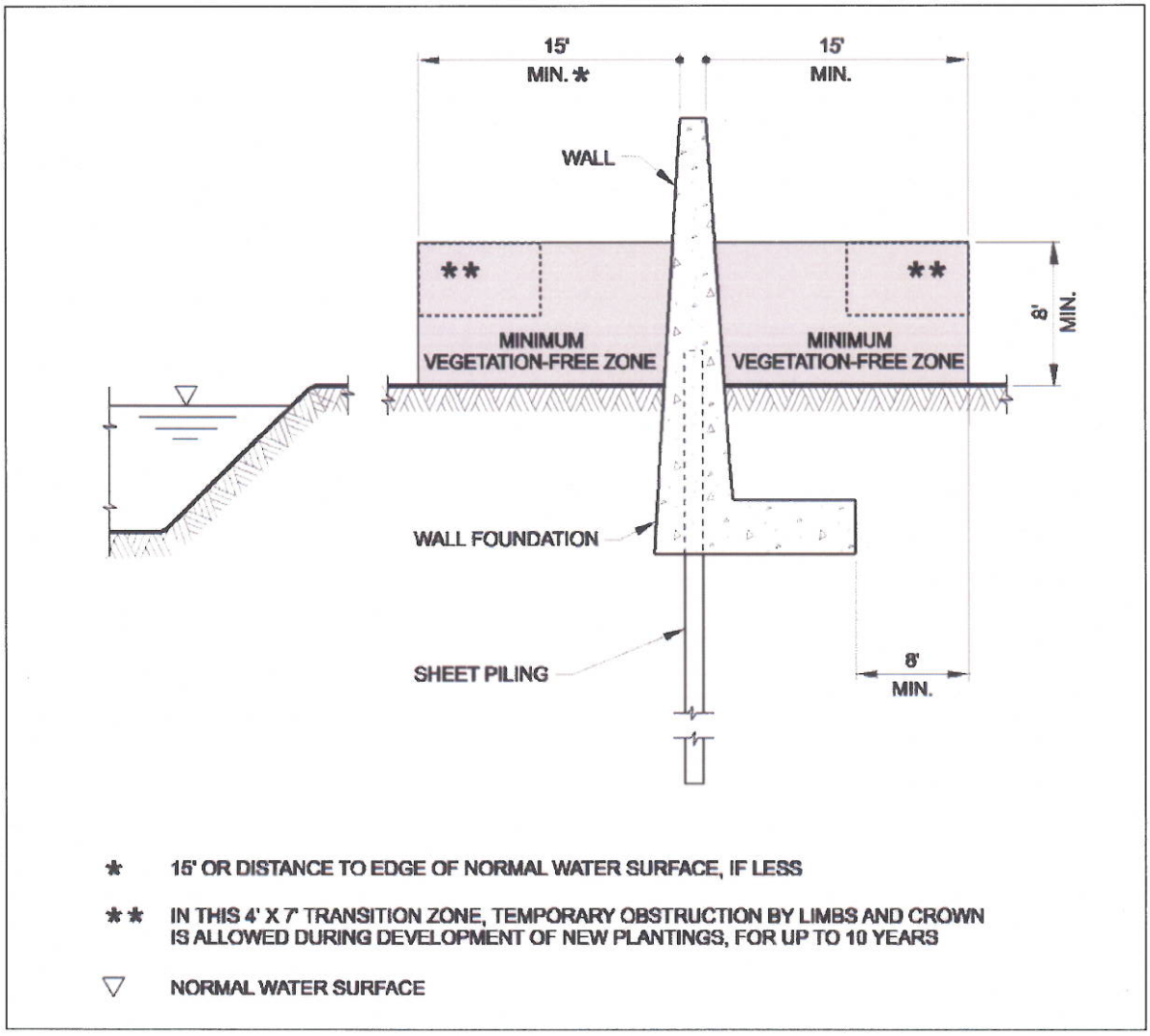


Figure 18: Cantilever-I Type Sheet-Piling Floodwall.

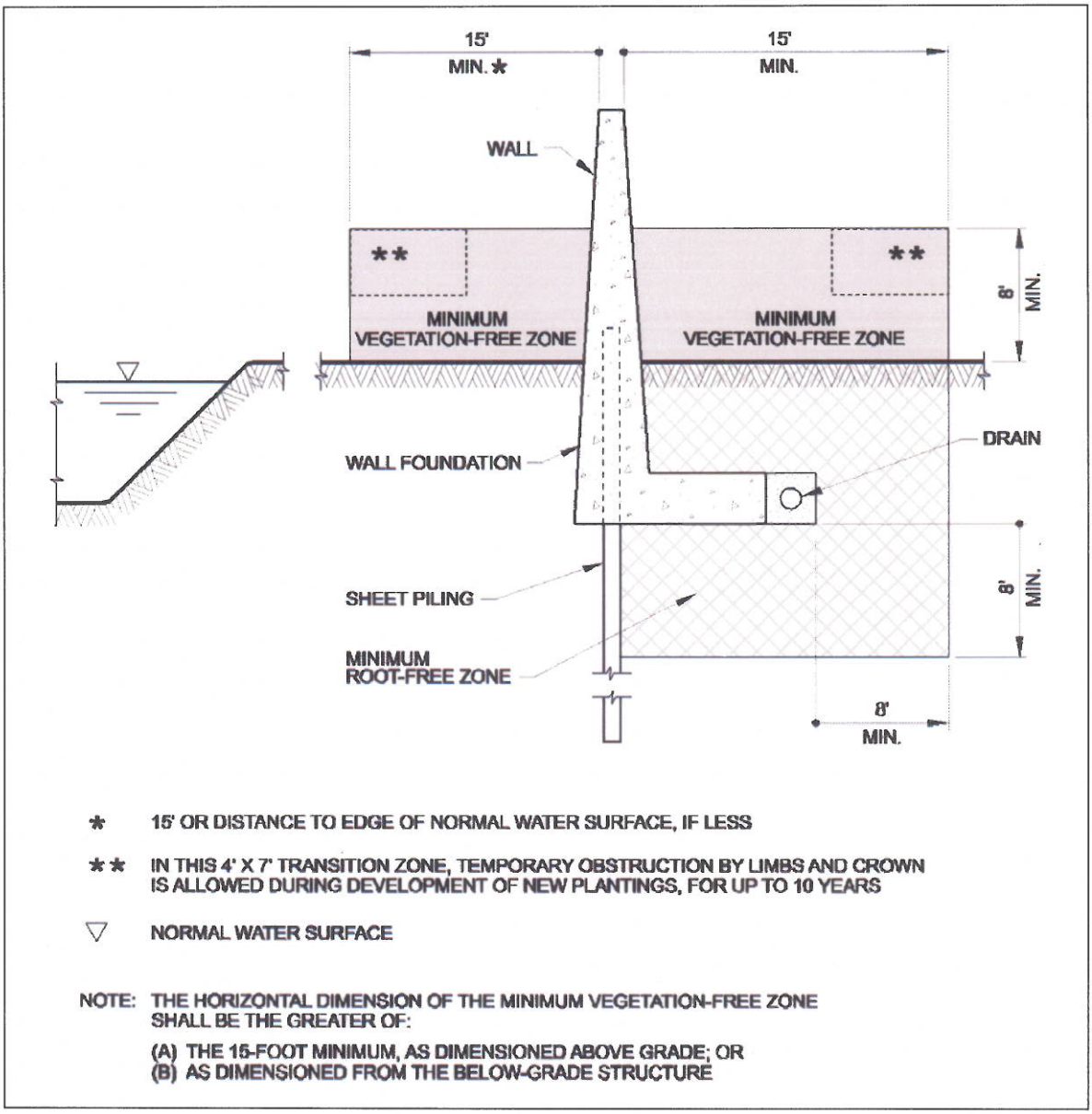


Figure 19: Cantilever-I Type Sheet-Piling Floodwall with Drain.

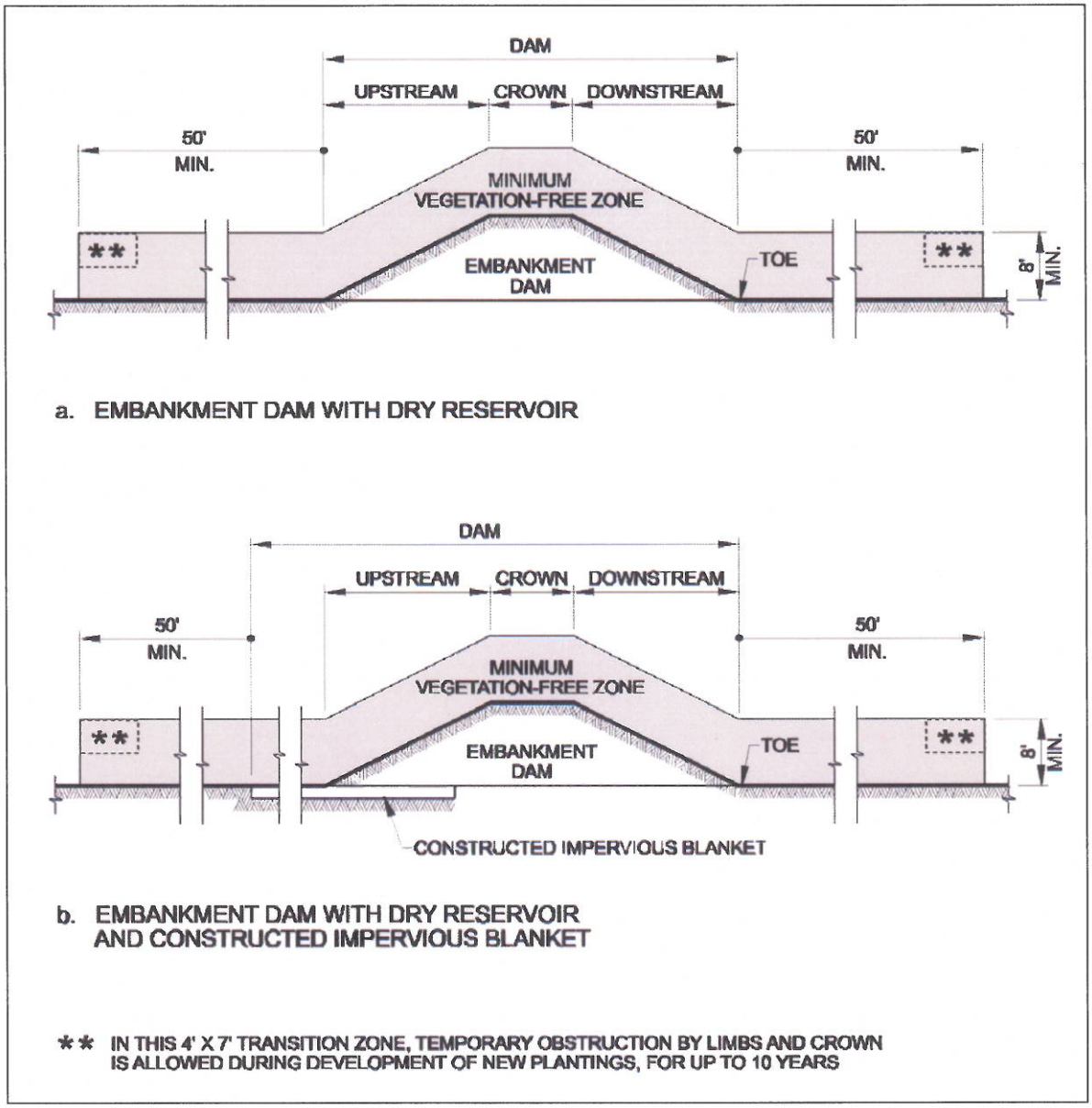


Figure 20: Embankment Dam (Earth Fill, Rock Fill, or Earth and Rock Fill).

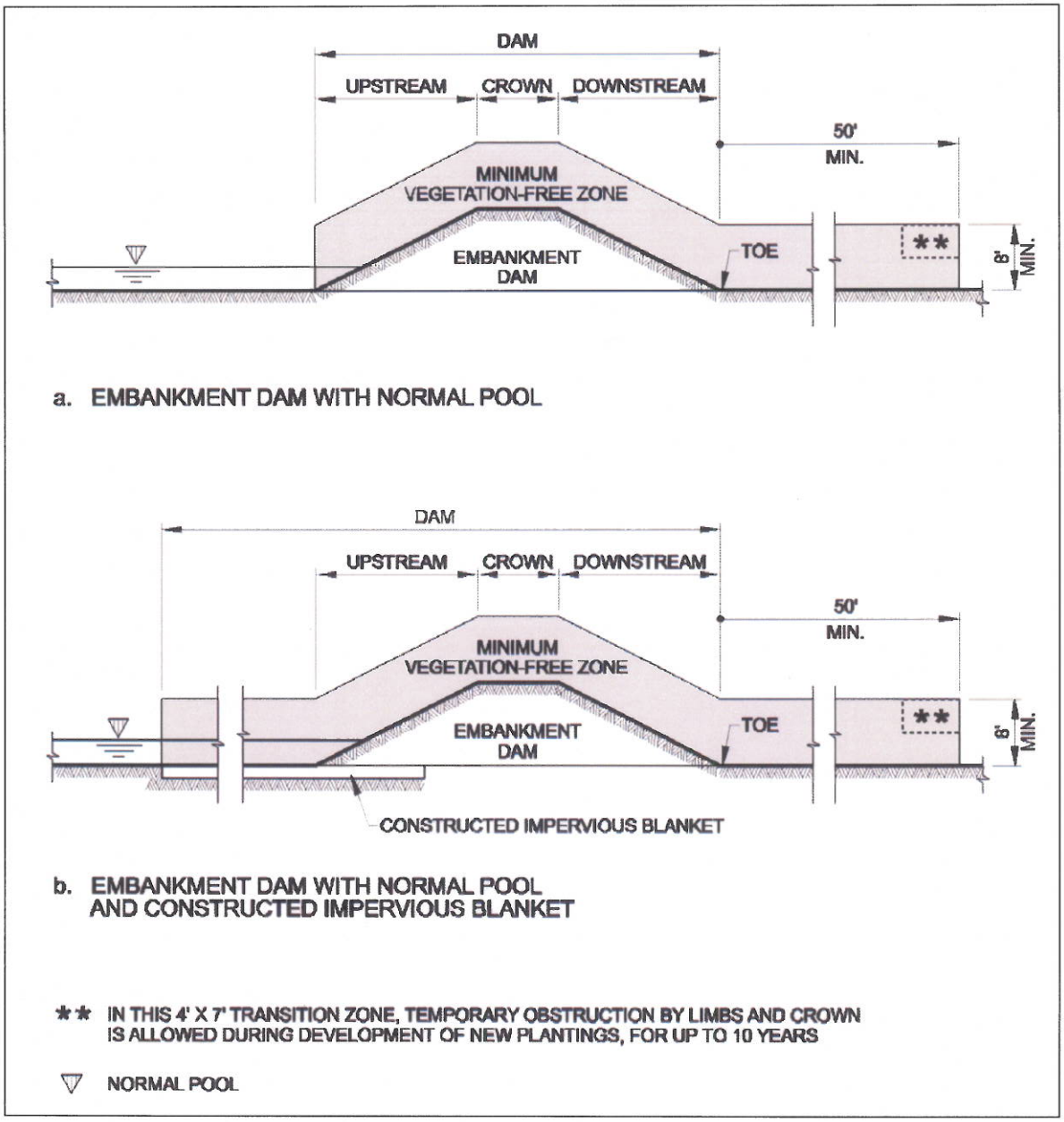


Figure 21: Embankment Dam (Earth Fill, Rock Fill, or Earth and Rock Fill).

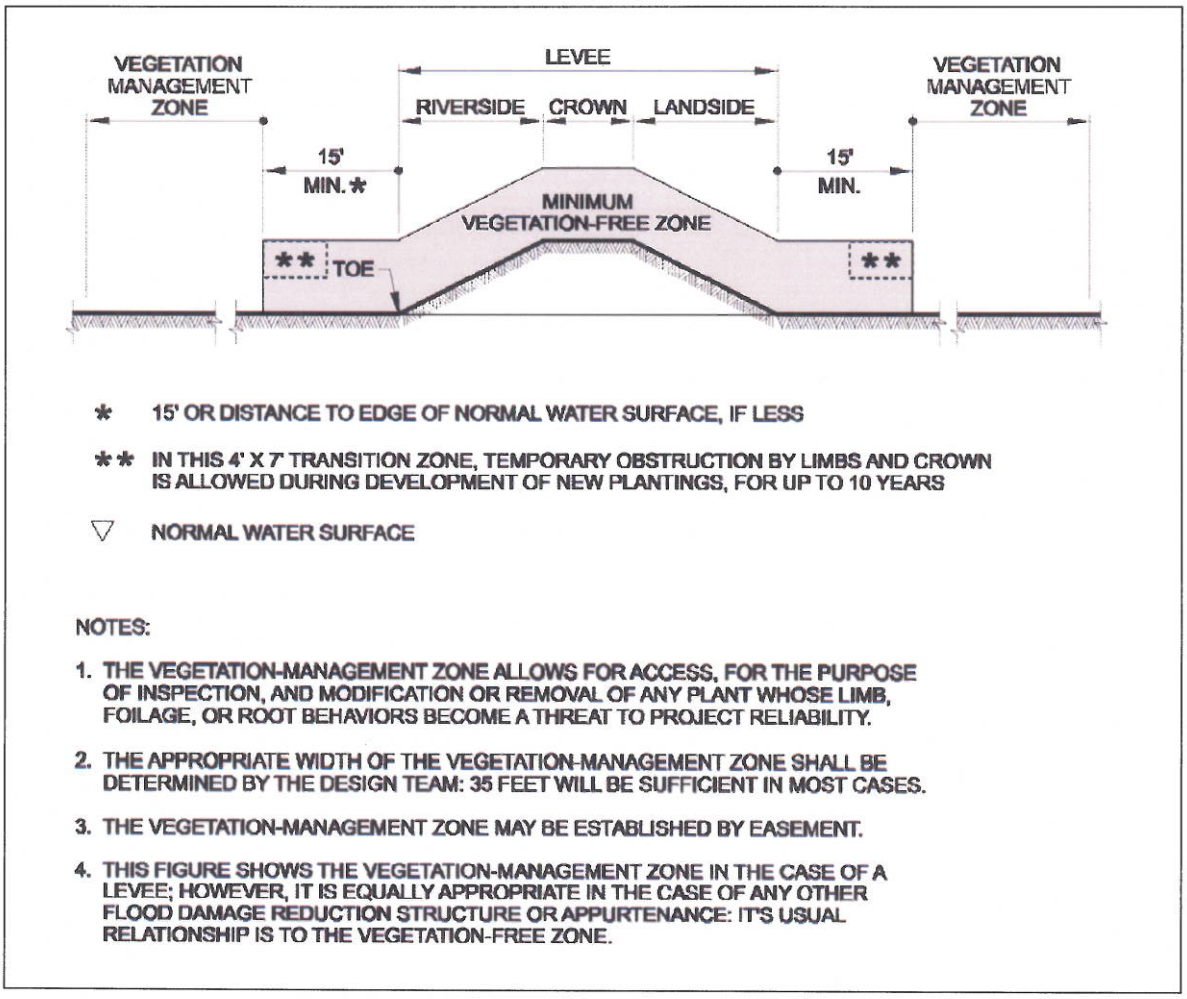


Figure 22: Vegetation-Management Zone.

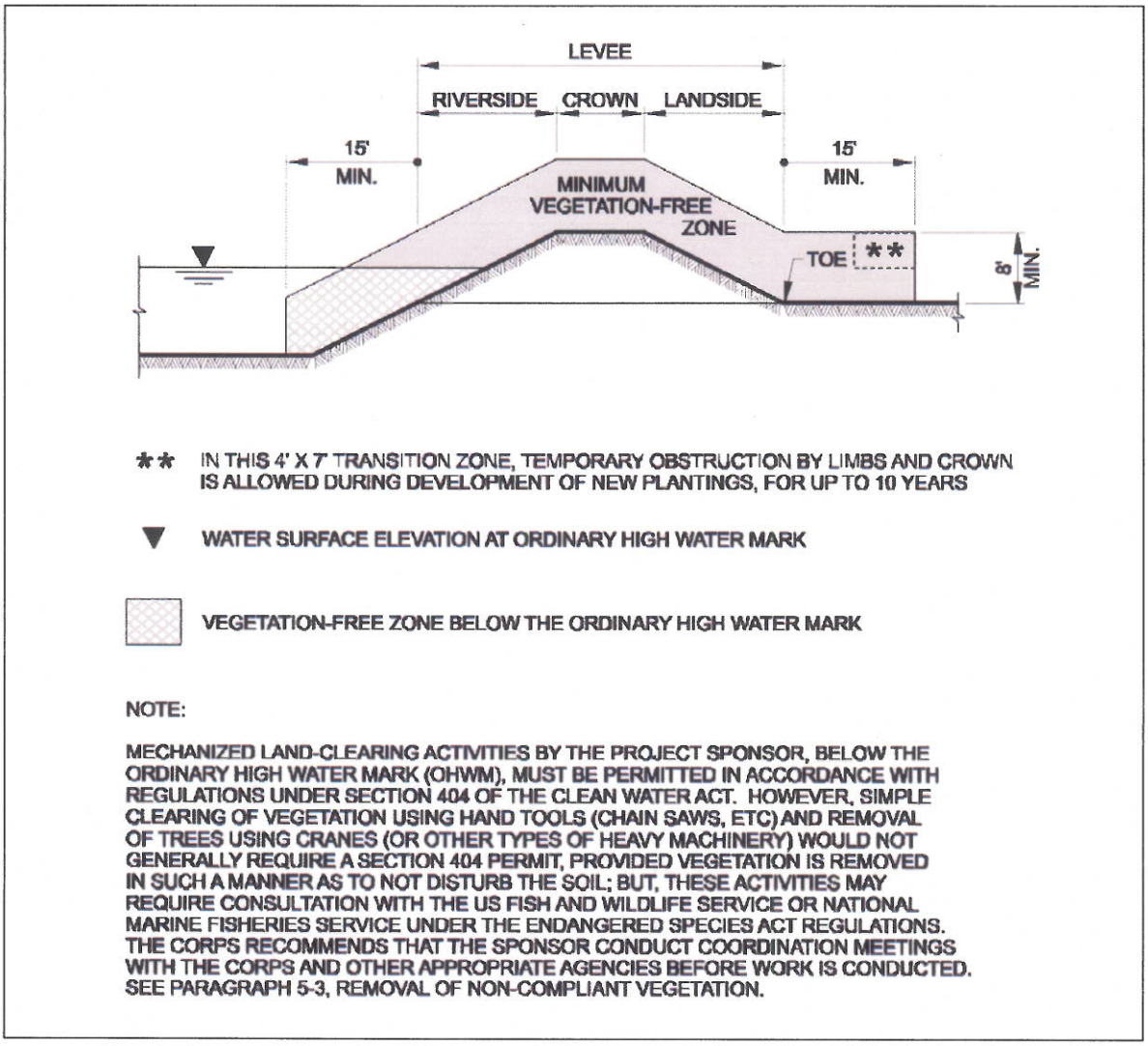


Figure 23: Levee Section with Ordinary High Water Mark Above the Riverside Toe.

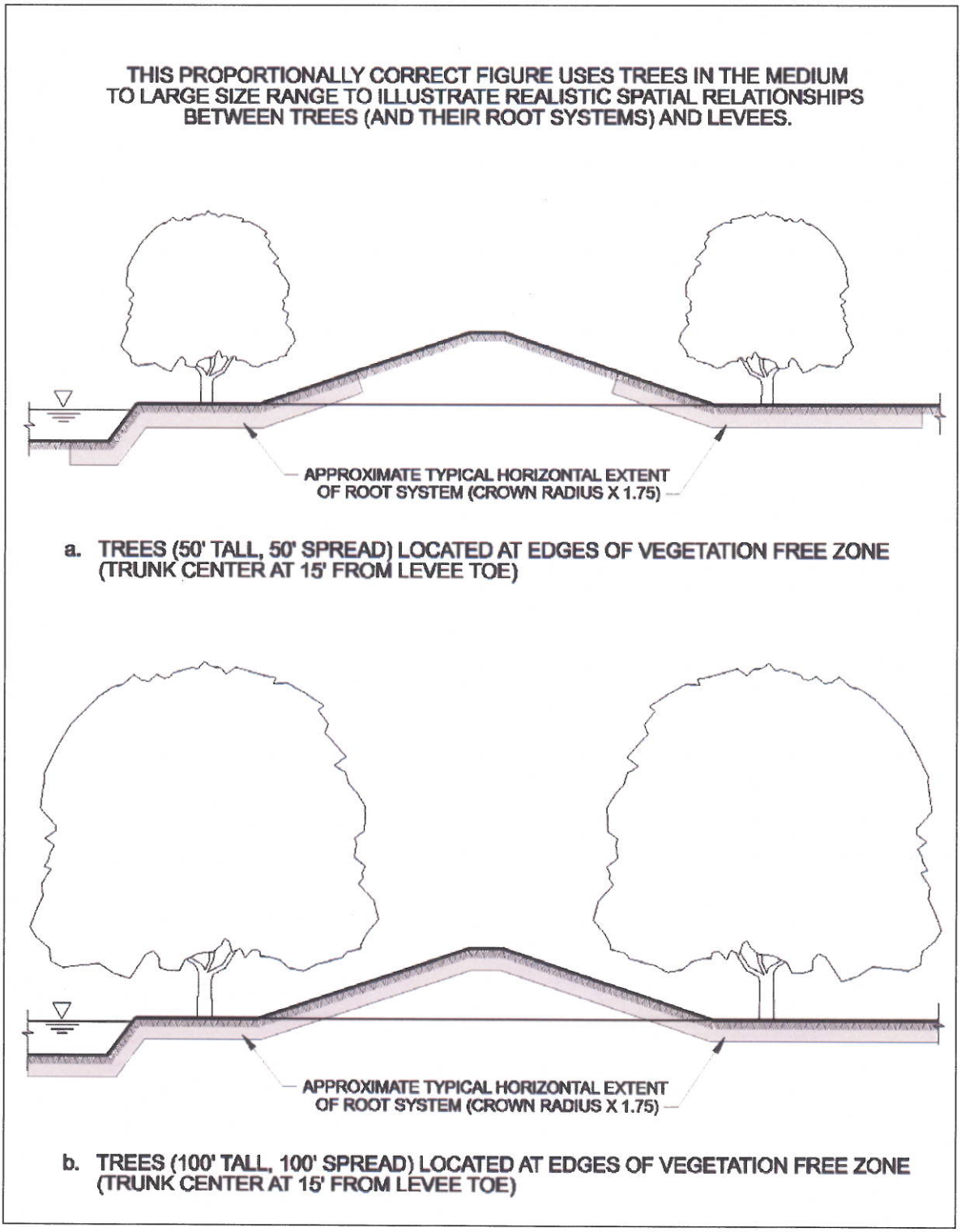


Figure 24: Levee (20 feet tall, 3:1 side slopes) with Trees, as Noted Above.

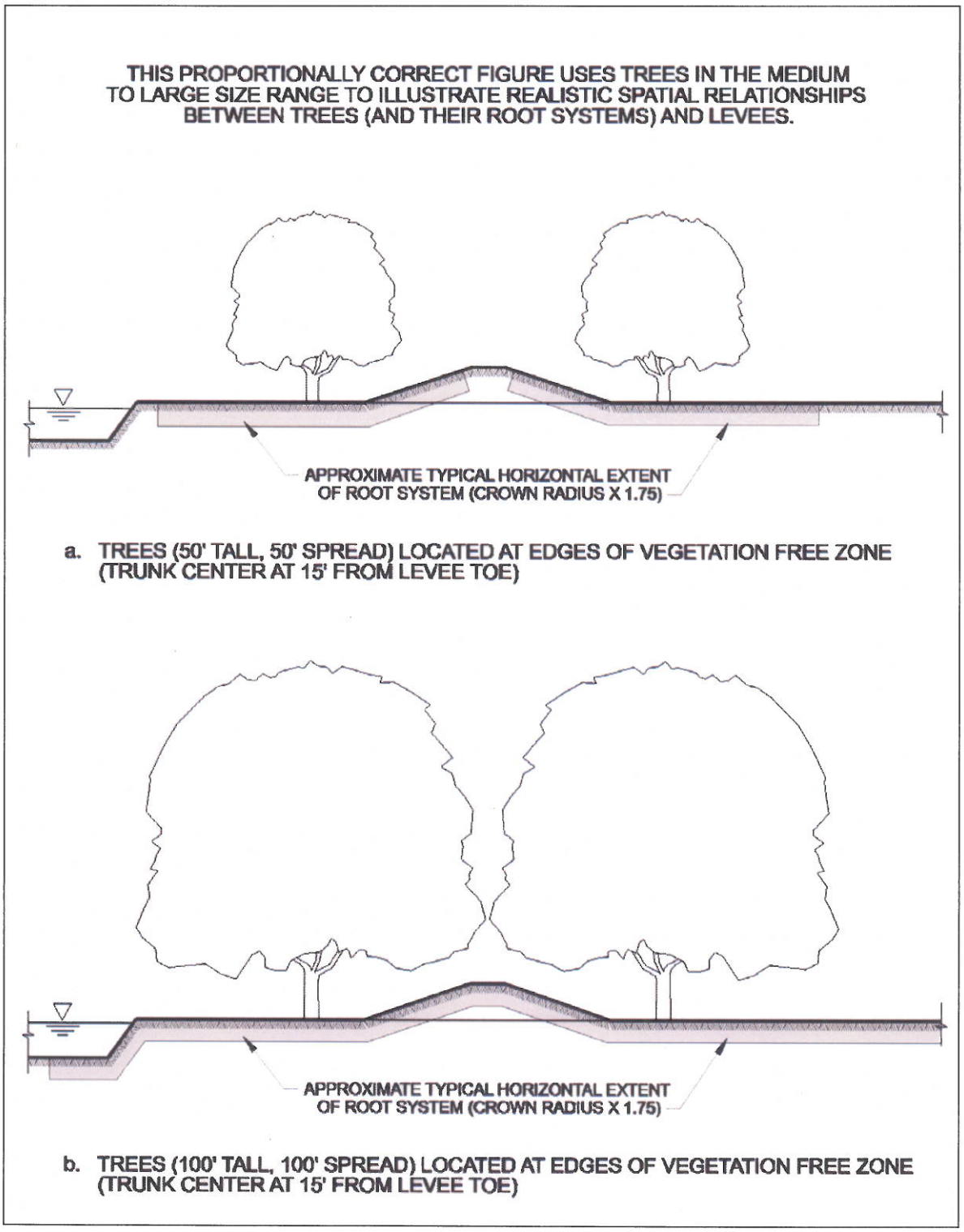


Figure 25: Levee (10 feet tall, 3:1 side slopes) with Trees, as Noted Above.

GLOSSARY

Critical Structure
A critical structure is any component of a flood damage reduction system that contributes to system reliability.

Flood Damage Reduction (FDR) System
A flood damage reduction system is made up of one or more flood damage reduction segments that collectively provide flood damage reduction to a defined area. Failure of one segment within a system constitutes failure of the entire system. Failure of one system does not affect another system.

Forb
A forb is an herbaceous (non-woody) annual, biennial, or perennial plant, other than grass, sedges, and rushes (e.g. alfalfa, clover, vetch).

Herbivory
Herbivory is the consumption of vegetation by animals.

Ordinary High Water Mark (OHWM)
The Regulatory definition of the OHWM is provided at 33 CFR Part 328.3(e) and states: "The term **'ordinary high water mark'** means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." The OHWM determines the lateral extent of the jurisdiction of the Corps within Waters of the United States (see Figure 23).

Overbuild
Beyond the normal engineered cross-section of a levee, dam or appurtenant soil structure, overbuild is additional soil mass, fulfilling flood-damage-reduction design criteria and therefore subject to vegetation-free and root-free requirements.

Variance
A variance is a Corps-approved exemption from compliance with specific standards.

Appendix C

Supporting Documents, Figures, and Tables for Geomorphology and Flood Control

SUMMARY REPORT ON

HYDRAULIC IMPACTS OF THE WEST SACRAMENTO LEVEE IMPROVEMENT PROJECT

DRAFT

Prepared For:

WEST SACRAMENTO

Prepared By:

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June 22, 2009

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12. Comparison of 1-in-500 Year Water Surface Profiles - Sacramento River
13. Comparison of 1-in-500 Year Water Surface Profiles - Yolo Bypass
14. Comparison of 1-in-500 Year Water Surface Profiles - Sacramento Bypass
15. Comparison of 1-in-500 Year Water Surface Profiles - Sacramento Ship Channel

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1. Overview

This purpose of this report is to present the results of a hydraulic impacts analysis that was performed for the West Sacramento Levee Improvement Project (WSLIP). The following WSLIP components, which potentially affect riverine water surface elevations, were included in this impact analysis:

- Raise West Sacramento levees to 1-in-200 year water surface elevations plus three feet for freeboard
- In-channel erosion protection design elements[1]

In addition to the project design elements, the water surface profiles developed for this analysis (without project and with project conditions) are based on the following criteria:

- Levees overtop without failing,
- Urban levees have minimum crown elevation of 1-in-200 year water surface plus three feet of freeboard,
- Folsom Joint Federal Project (JFP) in place
- The following components of the Three Rivers Levee Improvement Project are in place:
    - RD 784 Bear River levee setback,
    - RD 784 Western Pacific Interceptor Canal levee raise,
    - RD 784 Feather River levee setback
- Levee District 1 Feather River (west) levee setback is in place
- The Natomas Levee Improvement Project (NLIP) is in place
- Sacramento River Flood Control Project (SRFCP) levees with deficient design freeboard were raised to eliminate the deficiency.

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Figure 1 shows the West Sacramento study area used in this analysis.

[1] Erosion protection design elements considered identified in the March 25, 2009 HDR Administrative Draft Report entitled "Alternatives Analysis: West Sacramento Area Flood Control Agency Levee Improvement Program". A similar configuration of erosion protection (rip rap armoring) in this reach was previously shown (June 27, 2005 MBK report for the Sacramento River Corridor Floodway Planning Forum entitled “Hydraulic Impact Analysis of Cumulative Development in Sacramento River Corridor Floodway”) to have no measurable impact on surrounding water surface elevations, so this WSLIP project element was not explicitly analyzed for this report.

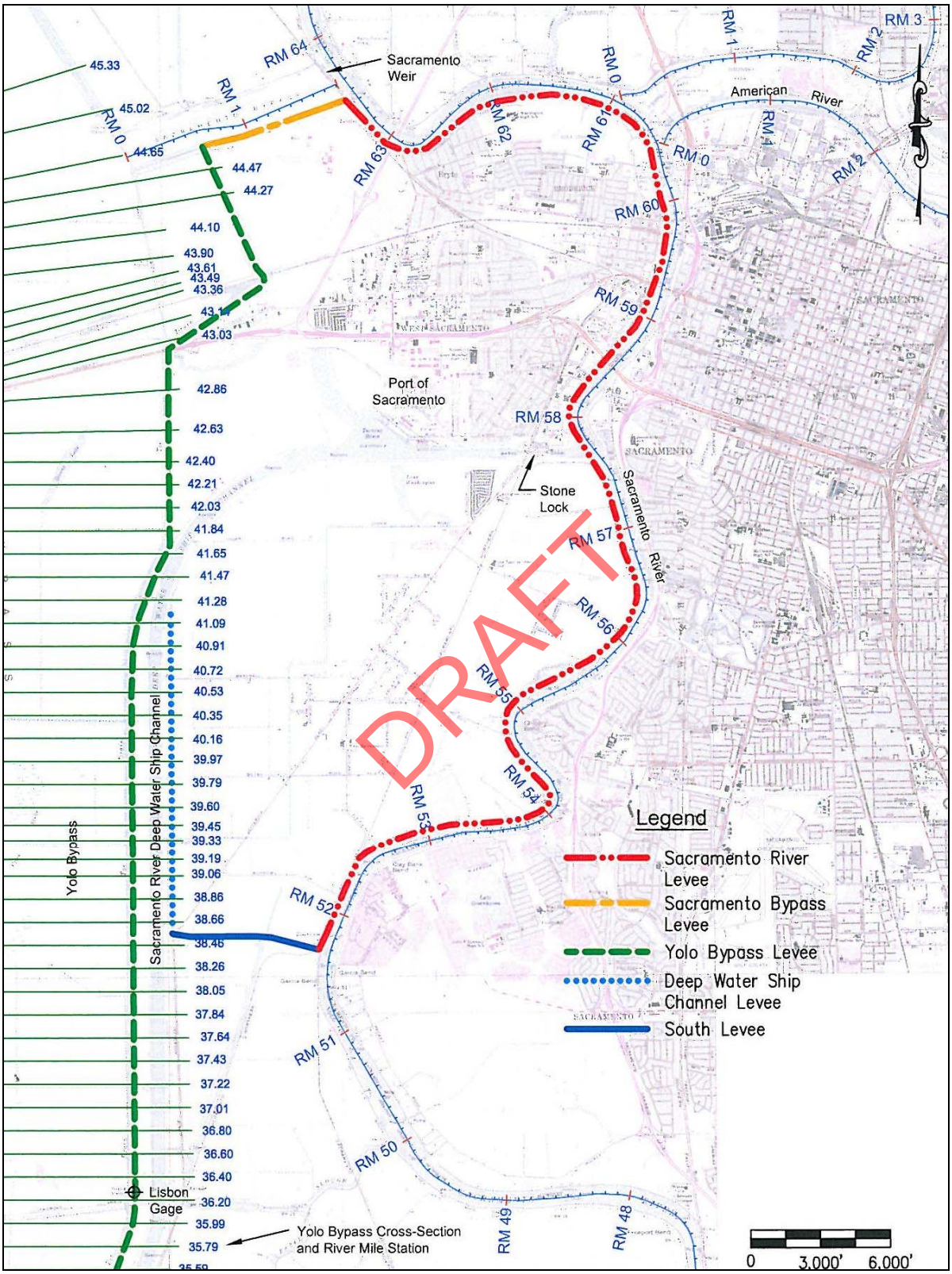


Figure 1. West Sacramento Study Area

2. Sacramento River Flood Control Project System Background

The perimeter levee system around West Sacramento is part of a larger integrated system of levees, dams, and bypass channels comprising the Sacramento River Flood Control Project (SRFCP; Figure 2). This system encompasses five historic flood basins in the Sacramento Valley (Colusa, Sutter, Feather, Yolo, and American Flood Basins) and the sub-basins contained therein. Planning, design, and construction of the SRFCP has been ongoing since the early 1900s under the leadership of the USACE and the State of California (State), with local levee and reclamation districts playing the principal role in operating and maintaining the system.

The SRFCP levees were set close to the river channel in order to improve navigation by having the rivers scour hydraulic mining sediments. The design of the system assumed no levee failures, but included five engineered diversions and one natural overflow diversion. The natural diversion is to Butte Basin, which is upstream from the SRFCP levees. This diversion did not include flowage easements because the Butte Basin is a historic flood basin. The five engineered diversions include two additional diversions to Butte Basin (Moulton and Colusa Weirs), one diversion to the Sutter Bypass (Tisdale Weir), and two diversions to the Yolo Bypass (Fremont and Sacramento Weirs). All of the engineered diversions included the acquisition of property rights to support the diversions. The deliberate planning, construction, and maintenance of the diversions ensured that they would function during flood conditions and serve as reliable features of the flood project.

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Initially, the river channel and bypass levees in each segment of the system were constructed based on a standard geometry. The levees were designed with a predetermined freeboard allowance tied to specified flows and associated water surface elevations, generally matched to observed conditions during the 1907 and 1909 floods. Over time, the standard levee section was increased because of numerous levee failures. The minimum standard levee changed from a levee with a top width of 10 feet to one with a top width of 20 feet. In addition, the design flows were modified substantially on the Feather and American Rivers. This was the result of floods that occurred after 1909, which demonstrated these rivers could produce substantially greater flows than occurred during the 1907 and 1909 floods. Because numerous levee failures occurred along the Feather River levees between 1920 and 1934, these levees were set back and enlarged to accommodate greater flows. These changes were summarized in memorandums issued by the USACE which define the minimum freeboard requirements for each segment of the SRFCP, collectively referred to as the "USACE 1957 Profile." Over the years, the system capacity of the SRFCP was also greatly expanded by the construction of five major multiple-purpose reservoirs (Shasta, Black Butte, Oroville, New Bullards Bar, and Folsom Reservoirs), containing 2.7 million acre-feet of flood control storage space.

The record floods of 1986 and 1997 triggered additional system modifications. Although these floods were significantly larger than the 1907 and 1909 floods, the availability of reservoir storage largely prevented flows in the system from exceeding the design of the SRFCP. Nevertheless, numerous project levees experienced unexpectedly severe stress and some failed. This experience caused the USACE, the State, and their local partners to perform a series of geotechnical evaluations on the SRFCP levees and to adopt new, more rigorous levee design standards, including updated standards for seepage through and under project levees. To meet

these standards, USACE, the State, and local flood control agencies have made substantial investments in addressing identified deficiencies in levees throughout the SRFCP and in improving the level of flood protection provided by the levees, particularly in urban areas. Federal, State and local support for these levee improvements has been secured under several federally authorized projects, including the Sacramento Urban Levee Reconstruction Project, the American River Watershed Investigation, the West Sacramento Levee Improvement Project, the Sutter Basin Project and the Yuba River Basin Project. In the aftermath of the flooding of New Orleans, these authorized projects are being expanded to support an even broader scope of urban levee improvement activity.

The evolution of these urban levee improvements is occurring within a SRFCP management framework that has historically allowed necessary adaptations to the system without undermining its basic operational principles. These principles may be summarized as follows. First, the SRFCP is not intended to provide a uniform level of flood protection (statistical probability of flooding) to the various sub-basins within the protected area. Rather, each sub-basin is protected by levees that are required to at least meet the SRFCP minimum geometrical standards, including freeboard reflecting the water surface profile prescribed for that segment of the system. Second, each sub-basin's flood protection is dependent on the fitness of its own levees and not on the condition (or failure) of any other sub-basin's levees. Accordingly, each sub-basin has the right to keep its levees in the fittest possible condition to ensure that these levees will perform as reliably as possible in a flood. This right ensures the orderly operation and maintenance of the system since even the most modest levee work has the potential to trigger a "transfer of risk" from one sub-basin to another, at least in theory; and there are no data or modeling tools available to quantify such transfers of risk, assess their significance, or determine how they might be mitigated. Third, for this reason, the administration of the SRFCP has historically relied on "change in design water surface elevation" as the guideline for evaluating the effects of any proposed levee work.

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The strictest scrutiny is given to levee work involving physical changes in the geometry of the river channel since these changes have the most potential to alter water surface elevations prescribed by the SRFCP design water surface profiles (SRFCP 1957 profiles). This work includes placement of fill or construction of structures in the floodway, construction of new levees, relocation of existing levees, excavation within the floodway, construction of large berms for protecting riverbanks, raising an existing levee (waterside raise), construction of a new bypass, and planting of vegetation within the floodway. Landside levee work of the type proposed as part of the NLIP, such as placing a cutoff wall in a levee, adding a seepage berm to a levee, placing a field of seepage relief wells along a levee, raising a levee (landside raise), widening a levee (increased top width), and relocating a seepage ditch, is also strictly scrutinized; but is not likely to cause impacts.

The standard procedure for this evaluation is to use hydrologic and hydraulic computer modeling tools such as, HEC-1, HEC-2, UNET, HEC-RAS, RMA2, FESWMS, etc. The analysis consists of calibrating the hydraulic model to historic flood events using high-water marks and stream gage data. The calibration activity is normally conducted on a system-wide basis instead of a site-specific basis. However, data available for computer model calibration can be sparse or nonexistent. In addition, assumptions must be made regarding reservoir operations. Because all

of the reservoirs that contribute to the operation of the SRFCP (Shasta, Black Butte, Oroville, New Bullards Bar and Folsom) are governed by water control manuals issued by USACE, current reservoir operations are assumed to continue except where it is reasonably foreseeable that the current operation would change. Examples of such changes are at the Folsom Dam and Reservoir: where Congress has directed USACE to formalize the variable space storage operation that has been in effect by agreement between SAFCA and the U.S. Bureau of Reclamation since 1995; and where water control structures are being modified as part of the Folsom Dam Joint Federal Project.

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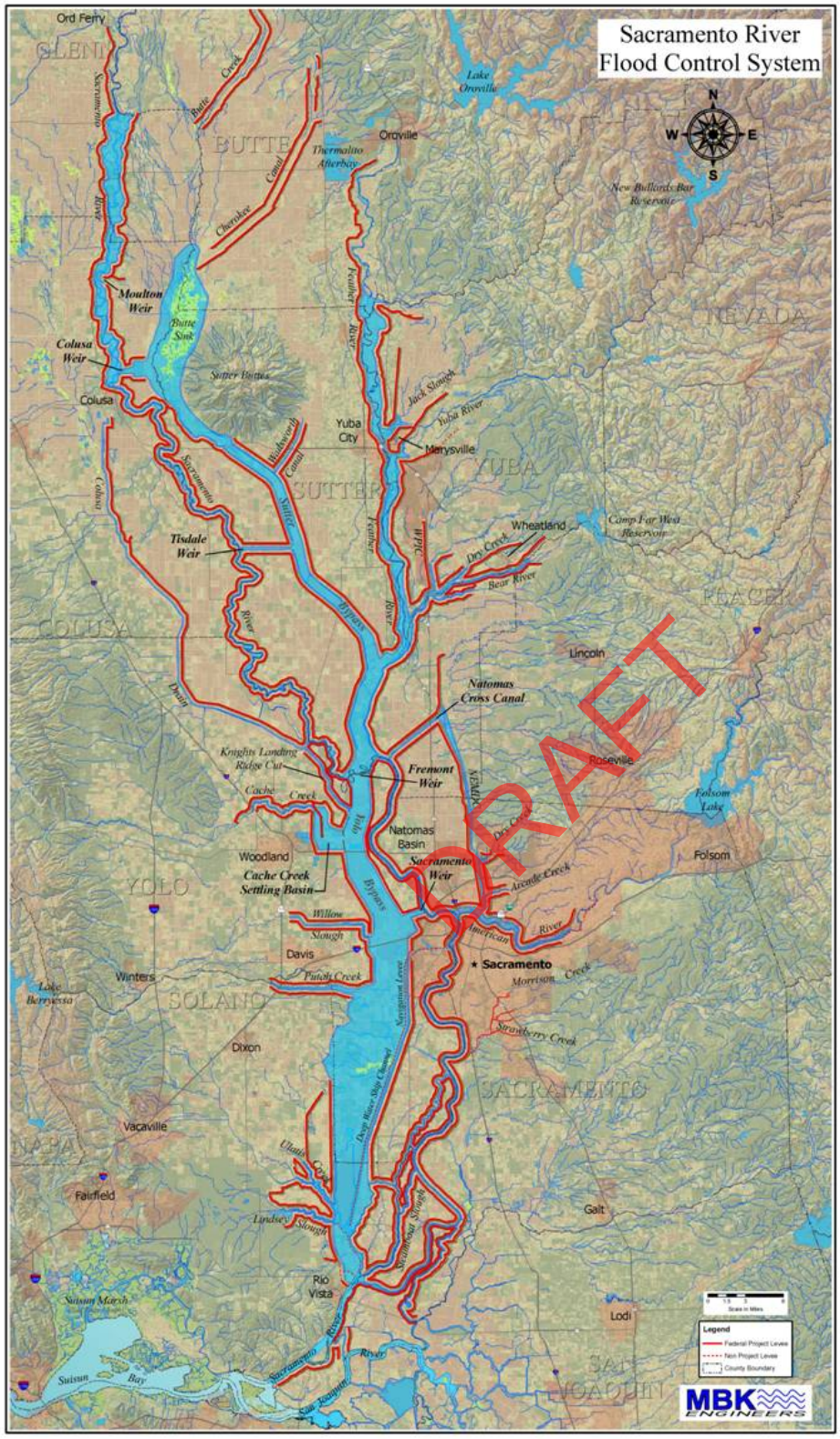


Figure 2. Sacramento River Flood Control System Map

3. Modeling Analysis

3.1 Approach

Table 1 defines the conditions analyzed and the various modeling assumptions that went with those conditions. As this table shows, an "Existing", "Without Project", and a "With Project" condition were analyzed.

Table 1. Definition of Model Assumptions for Various Conditions

Condition	Top of Levee Assumption	Levee Failure Assumption	Reservoir Ops Assumption	Additional
Existing	Existing top of levee grade April 2008	No Levee Failure	Existing reservoirs and current (2008) operation criteria	
Without Project	Same as Existing with the following changes. Federally authorized improvements to Folsom Dam are implemented and urban area levees outside the West Sac Basin are assumed to have levees at 1-in-200 year water surface + three feet of freeboard. WSLIP levees same as Existing Condition.	No Levee Failure	Same as Existing except Folsom Dam will be operated in accordance with the Joint Federal Project currently under construction	
With Project	Same as Without Project except WSLIP levees raised to design level (1-in-200 year water surface + three feet of freeboard)	No Levee Failure	Same as Without Project	In-channel erosion protection

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3.2 Hydraulic Model

As part of the Sacramento and San Joaquin River Basins Comprehensive Study (Comp Study), the U.S. Army Corps of Engineers (USACE) developed a UNET model of the Sacramento River basin, the extent of which is shown in Figure 3 and listed in Table 2. UNET is a one-dimensional unsteady open-channel flow model with the ability to simulate exchange of flow between river channels and floodplains, which was originally developed for the USACE Hydrologic Engineering Center (HEC). UNET is the predecessor of the unsteady flow routine in the current

HEC-RAS program. UNET was used for this model because at the time of the model development the unsteady flow routine had not yet been incorporated into the HEC-RAS program. Converting the Sacramento River UNET model to HEC-RAS is a significant task and is currently being undertaken by the USACE. In the meantime the UNET model is being used for hydraulic analyses in the Sacramento River basin.

MBK Engineers has made significant modifications and refinements to the Sacramento River UNET model, initial documentation of which is provided in Appendix A. The calibration simulation has been updated with the June 2008 version of the model, but the June 2003 report provided in Appendix A has not yet been updated. Maximum water surface profiles for the reaches surrounding West Sacramento showing the results of the June 2008 model calibration simulation are provided in Appendix B. The USACE performed a review of the MBK version of the Sacramento River UNET model in late 2005 and early 2006, culminating in an email from John Carroll, then Chief of the USACE Sacramento District Hydraulic Design Branch, on 6/13/06 which stated the following:

"Based on our review of the MBK model, it is acceptable to use this tool for your ongoing design purposes for remediation work on the Natomas Area Levee Project. The SAFCA Natomas Area Levee Project report indicates a design levee profile based on this model's 200-year water surface profile plus 3 feet. We concur in the application and recommend addition of this freeboard value to the 200-year water surface profile to determine the minimum design top of levee profile."

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Table 2. Sacramento River UNET Model Boundaries

Boundary Type	River	Location	River Mile	
			USGS	Comp Study
Upstream	Sacramento River	Hamilton City	219.1	215.5
	Feather River	Thermalito Afterbay Outlet	59.0	58.6
	Yuba River	Below Englebright Dam	---	22.0
	Bear River	Wheatland gage	---	12.5
	American River	Fair Oaks gage	---	22.0
Downstream	Sacramento River	At Three Mile Slough	9.4	9.5
	Georgiana Slough	At Mokelumne River	---	---

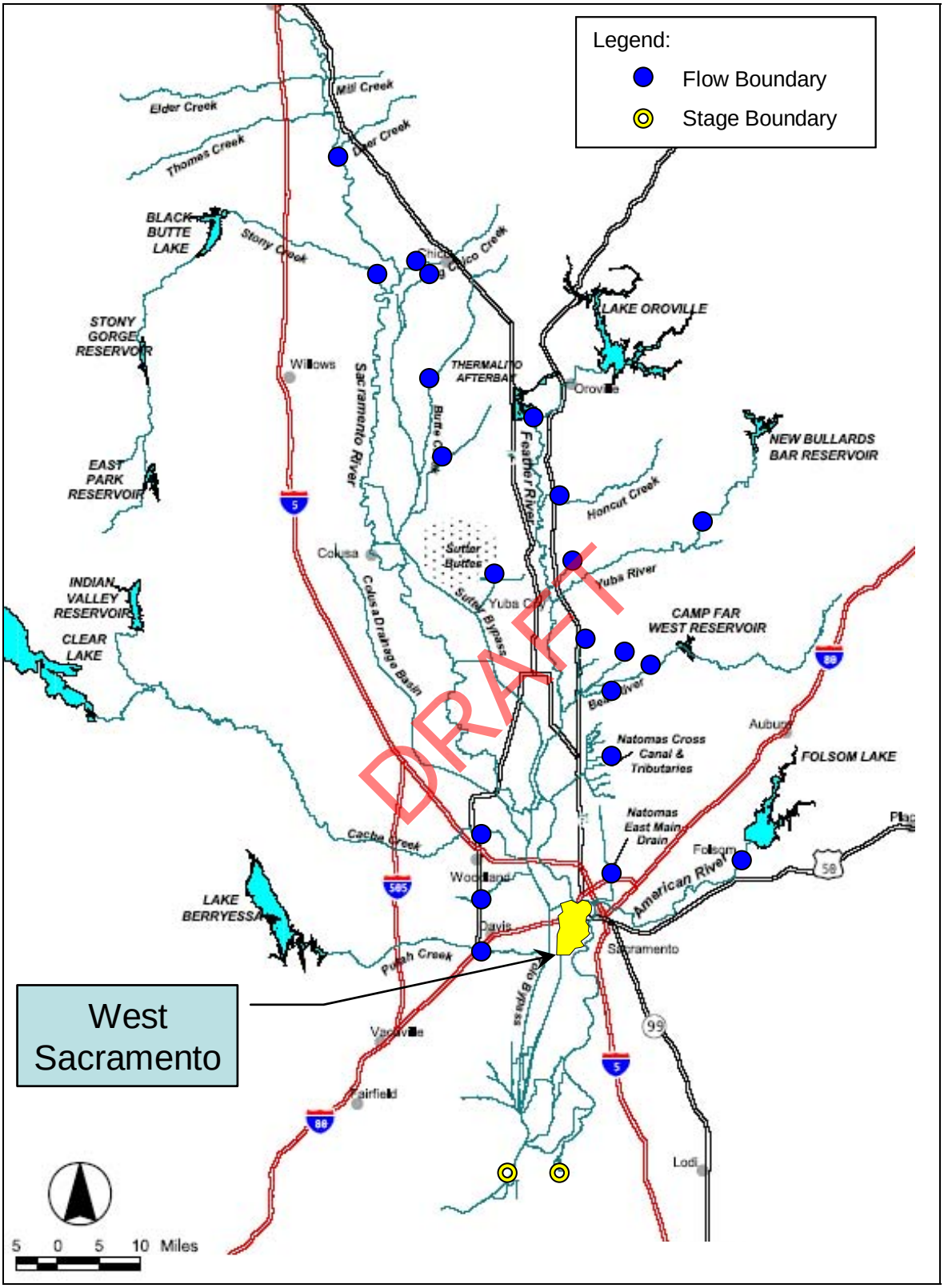


Figure 3. Sacramento River UNET Model Boundaries (Base Map by USACE)

3.2.1. Model Changes from December 2008 to Present

The December 4, 2008, report entitled "Supplemental Report for the City of West Sacramento Levee Alternatives Hydraulic Analysis" details the hydraulic model version used in that analysis. Since the development of that report, changes have been made to the hydraulic model which was used in this analysis. Those changes are:

- Revised/added potential overtop locations for American R, NEMDC, Feather R, Yolo Bypass, Sacramento Bypass, Sacramento River, and Sutter Bypass.
- Added bridge data for bridges crossing the upper & lower NEMDC and the PGCC.
- Revised weir C's: natural bank overflows=2.49, floodplain connections=2.59, adjacent stream connections=3.19; flood weirs=4.0.
- Renumbered NEMDC cross-section above RM2.2 to correspond to Comp Study river mile stationing (sections were from 1989 HEC2 file and stationing differed from Comp Study stationing by approximately -0.05 miles).

3.3 Hydrology

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The USACE, as part of the Comp Study, developed input flows for the Comprehensive Study Sacramento River UNET hydraulic simulation model for the following hypothetical storm centerings (* indicates used in this analysis):

- Sacramento River Mainstem at Latitude of Ord Ferry
- Sacramento River Mainstem at Latitude of Sacramento*
- Stony Creek
- Shasta to Ord Ferry
- Butte Creek
- Feather River at Oroville
- Feather River at Shanghai Bend*
- Yuba River
- Bear River
- American River*
- Cache and Putah Creeks

The storm centerings relied on historical flood patterns in the upstream basin to define the shape and magnitude of the flow contributions from each of the basins, and were designed to stress specific locations in the river system. For example, the Sacramento River Mainstem at Latitude of Sacramento centering was designed to place the most stress on the system at the latitude of Sacramento.

A review of previous simulations made with the various storm centerings indicated that the Sacramento River Mainstem at Latitude of Sacramento, Feather River at Shanghai Bend, and American River storm centerings were capable of producing the highest water surface elevations in the project area. The water surface elevation was therefore determined by simulating all three of these centerings and using the highest values.

More detail on the hydrologic data used in this analysis, including additional description and flow hydrographs, can be found in the December 4, 2008, report entitled "Supplemental Report for the City of West Sacramento Levee Alternatives Hydraulic Analysis".

3.4 Levee Performance

As previously noted, the hydraulic impact analysis assumed that levees would overtop without failing. In other words, levees that overtopped were treated as weirs, allowing water to leave or return to the river channel. Available top of levee data was reviewed and weirs were included in the model at potential overtopping locations.

4. Modeling Analysis Results

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Tables 3, 4 and 5 summarize the maximum water surface elevations at several locations in and around the project area for the Existing, Without Project, and With Project conditions for the 1-in-100 year, 1-in-200 year and 1-in-500 year flood events, respectively.

There are no calculated impacts of the WSLIP for the 1-in-100 year and 1-in-200 year flood events. For the 1-in-500 year flood, the maximum water surface elevation change on the Sacramento River between the Without Project and With Project conditions is 0.10 feet at River Mile 59.0 (0.09 is maximum difference for the selected locations in Table 5). However, even these relatively minor computed impacts are considered extremely implausible, given the significant portion of upstream and adjacent levees overtopped (see Table 6 for quantification of the levee overtopping from this analysis and Appendix A for analysis where upstream levees are allowed to fail) by this flood without any levee failures occurring.

Computed water surface elevation profiles for each of the key flow conditions in the project area are shown in Figures 4 through 15. (Figures 4 through 7 show the water surface elevation profiles of the 1-in-100 year flood; Figures 8 through 11 show the water surface elevation profiles of the 1-in-200 year flood; Figures 12 through 15 show the profiles for the 1-in-500 year flood.)

Table 3. 1-in-100 Year Maximum Water Surface Elevation Summary, No Levee Failures

Location (Comp Study River Mile)	Maximum Water Surface Elevation (ft. NGVD29)			Change (ft.)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
W. Sacramento city limit (63.44)	32.46	31.92	31.92	-0.54	0.00
American River (60.4)	32.46	31.90	31.90	-0.56	0.00
I St. Bridge (59.695)	32.19	31.63	31.63	-0.56	0.00
Stone Lock (57.86)	31.47	30.92	30.92	-0.55	0.00
Linden Road (56)	30.58	30.06	30.06	-0.52	0.00
Davis Road (54.75)	30.16	29.63	29.63	-0.53	0.00
W. Sacramento city limit (51.75)	28.53	28.03	28.03	-0.50	0.00
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	31.96	31.40	31.40	-0.56	0.00
Yolo Bypass east levee (0.56)	30.00	29.78	29.78	-0.22	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	29.56	29.40	29.40	-0.16	0.00
SPRR Bridge (43.24)	28.97	28.81	28.81	-0.16	0.00
Interstate 80 (42.96)	28.87	28.71	28.71	-0.16	0.00
Navigation Levee north end (41.65)	28.55	28.39	28.39	-0.16	0.00
W. Sacramento city limit (38.46)	26.96	26.82	26.82	-0.14	0.00
Lisbon Gage (36.2)	25.95	25.82	25.82	-0.13	0.00
Babel Slough (34.02)	24.95	24.83	24.83	-0.12	0.00
Clarksburg Road (31.89)	23.81	23.69	23.69	-0.12	0.00
Hamilton Road (29.42)	21.46	21.33	21.33	-0.13	0.00
Port of Sacramento					
SA 236	16.22	16.14	16.14	-0.08	0.00
Sacramento Ship Channel					
Marshall Road (40.72)	16.22	16.14	16.14	-0.08	0.00
W. Sacramento city limit (38.46)	16.22	16.14	16.14	-0.08	0.00

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Table 4. 1-in-200 Year Maximum Water Surface Elevation Summary, No Levee Failures

Location (Comp Study River Mile)	Maximum Water Surface Elevation (ft. NGVD29)			Change (ft.)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
W. Sacramento city limit (63.44)	34.85	33.94	33.94	-0.91	0.00
American River (60.4)	35.59	34.01	34.01	-1.58	0.00
I St. Bridge (59.695)	35.29	33.73	33.73	-1.56	0.00
Stone Lock (57.86)	34.54	33.01	33.01	-1.53	0.00
Linden Road (56)	33.55	32.09	32.09	-1.46	0.00
Davis Road (54.75)	33.12	31.67	31.67	-1.45	0.00
W. Sacramento city limit (51.75)	31.34	30.00	30.00	-1.34	0.00
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	34.70	33.50	33.50	-1.20	0.00
Yolo Bypass east levee (0.56)	31.61	31.33	31.33	-0.28	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	30.93	30.82	30.82	-0.11	0.00
SPRR Bridge (43.24)	30.32	30.22	30.22	-0.10	0.00
Interstate 80 (42.96)	30.20	30.10	30.10	-0.10	0.00
Navigation Levee north end (41.65)	29.86	29.76	29.76	-0.10	0.00
W. Sacramento city limit (38.46)	28.23	28.14	28.14	-0.09	0.00
Lisbon Gage (36.2)	27.19	27.10	27.10	-0.09	0.00
Babel Slough (34.02)	26.22	26.12	26.12	-0.10	0.00
Clarksburg Road (31.89)	25.08	24.99	24.99	-0.09	0.00
Hamilton Road (29.42)	22.89	22.78	22.78	-0.11	0.00
Port of Sacramento					
SA 236	17.64	17.53	17.53	-0.11	0.00
Sacramento Ship Channel					
Marshall Road (40.72)	17.64	17.53	17.53	-0.11	0.00
W. Sacramento city limit (38.46)	17.64	17.53	17.53	-0.11	0.00

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Table 5. 1-in-500 Year Maximum Water Surface Elevation Summary, No Levee Failures

Location (Comp Study River Mile)	Maximum Water Surface Elevation (ft. NGVD29)			Change (ft.)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
W. Sacramento city limit (63.44)	36.21	36.22	36.26	+0.01	+0.04
American River (60.4)	37.22	37.25	37.32	+0.03	+0.07
I St. Bridge (59.695)	36.86	36.90	36.99	+0.04	+0.09
Stone Lock (57.86)	36.06	36.15	36.21	+0.09	+0.06
Linden Road (56)	34.90	35.04	35.09	+0.14	+0.05
Davis Road (54.75)	34.43	34.59	34.64	+0.16	+0.05
W. Sacramento city limit (51.75)	32.54	32.64	32.68	+0.10	+0.04
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	36.17	36.16	36.21	-0.01	+0.05
Yolo Bypass east levee (0.56)	32.84	33.12	33.13	+0.28	+0.01
Yolo Bypass					
W. Sacramento city limit (44.6)	32.30	32.59	32.59	+0.29	0.00
SPRR Bridge (43.24)	31.69	31.98	31.99	+0.29	+0.01
Interstate 80 (42.96)	31.51	31.78	31.79	+0.27	+0.01
Navigation Levee north end (41.65)	31.14	31.41	31.41	+0.27	0.00
W. Sacramento city limit (38.46)	29.51	29.76	29.76	+0.25	0.00
Lisbon Gage (36.2)	28.45	28.69	28.69	+0.24	0.00
Babel Slough (34.02)	27.52	27.75	27.76	+0.23	+0.01
Clarksburg Road (31.89)	26.40	26.64	26.64	+0.24	0.00
Hamilton Road (29.42)	24.32	24.57	24.57	+0.25	0.00
Port of Sacramento					
SA 236	18.95	19.21	19.21	+0.26	0.00
Sacramento Ship Channel					
Marshall Road (40.72)	18.95	19.21	19.21	+0.26	0.00
W. Sacramento city limit (38.46)	18.95	19.21	19.20	+0.26	-0.01

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Table 6. Extent of Levee Overtopping, 1-in-500 Year Flood Event, No Failures (all values approximate)

Waterway	Total Length of Levee[1] (miles)	Simulated Length of Overtopped Levee[1,2] (miles)		
		Existing	Without Project	With Project
American River	24	13	12	12
Feather River	105	11	12	12
Natomas Cross Canal	10	4	0	0
Sacramento Bypass	4	0.2	0.3	0.3
Sacramento R. upstream of Natomas Cross Canal	180	1	1	1
Sacramento R. Adjacent to Natomas	36	7	6	6
Sacramento R. downstream of American R.	120	1	1	1
Sutter Bypass	60	2	1	1
Tisdale Bypass	8	0.3	0.3	0.3
Wadsworth Canal	9	1	1	1
Yolo Bypass	70	5	4	4

[1] Lengths represent both right and left banks combined
[2] Results displayed are for the Sacramento River storm centering

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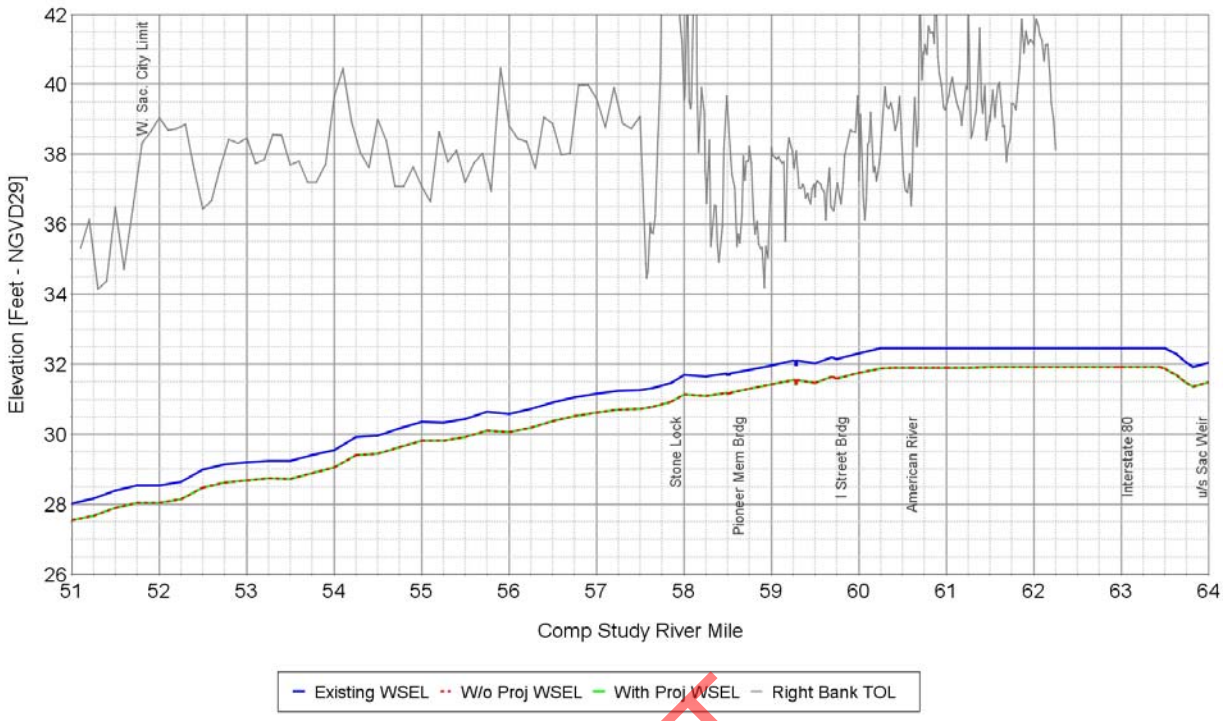


Figure 4. Comparison of 1-in-100 Year Water Surface Profiles - Sacramento River

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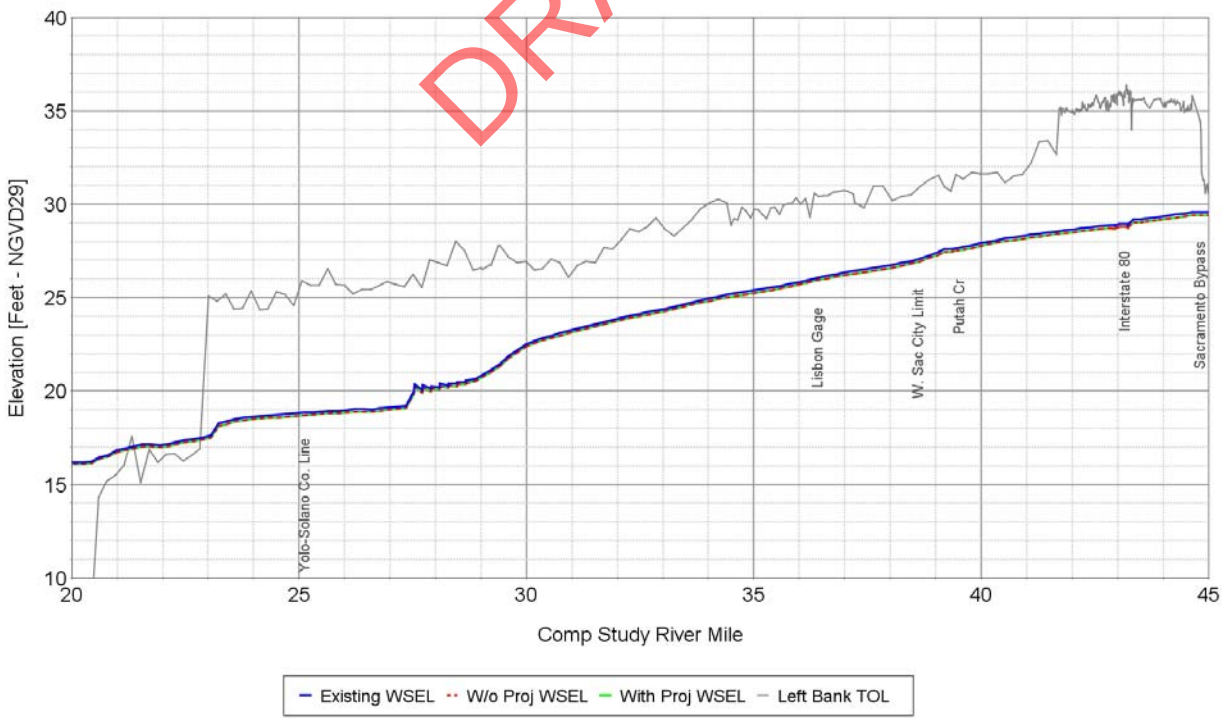


Figure 5. Comparison of 1-in-100 Year Water Surface Profiles - Yolo Bypass

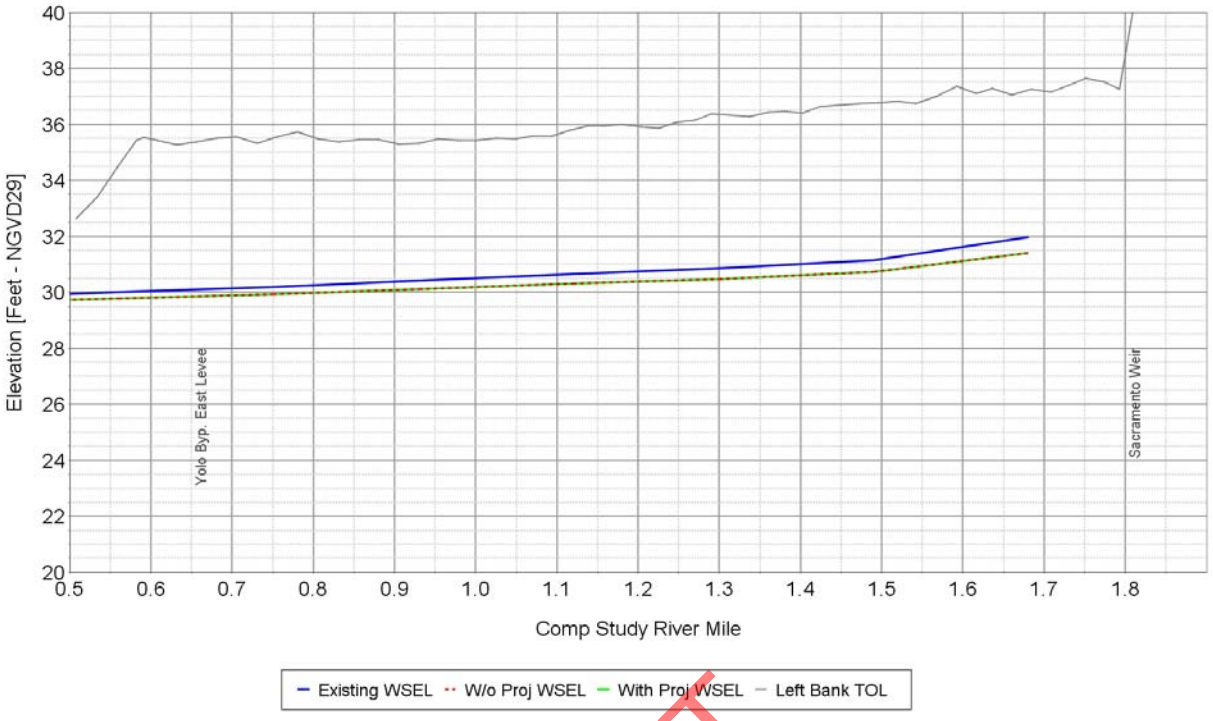


Figure 6. Comparison of 1-in-100 Year Water Surface Profiles - Sacramento Bypass

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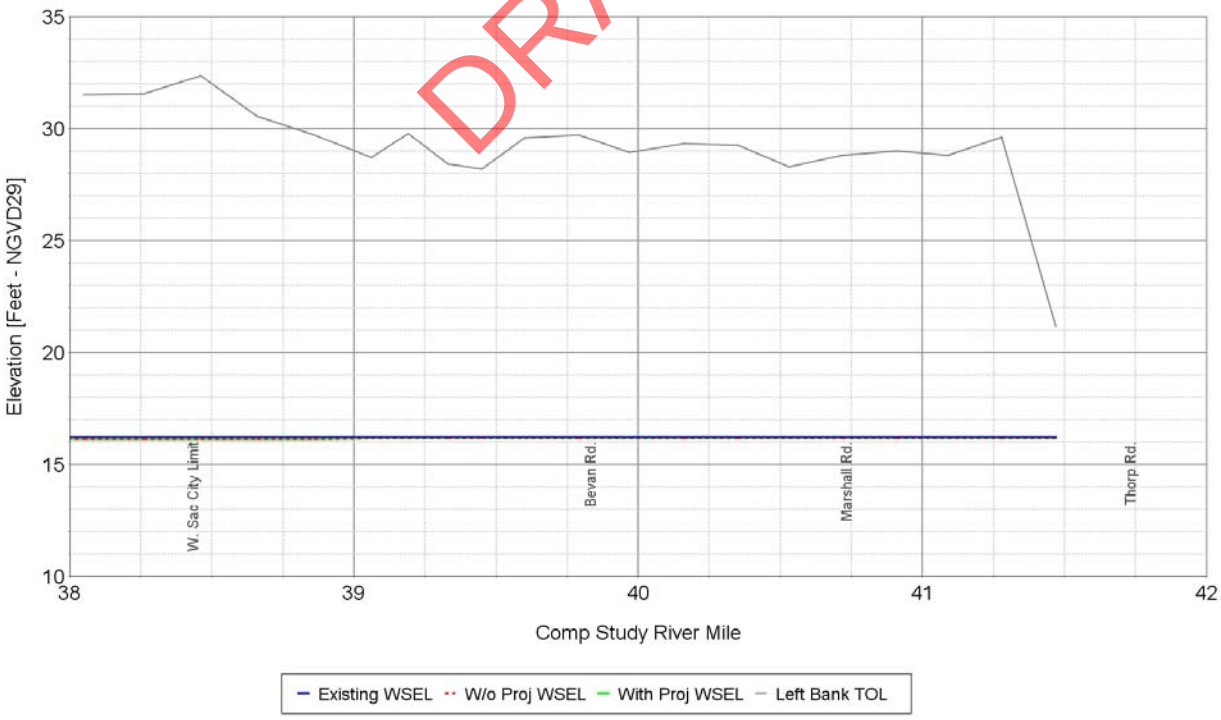


Figure 7. Comparison of 1-in-100 Year Water Surface Profiles - Sacramento Ship Channel

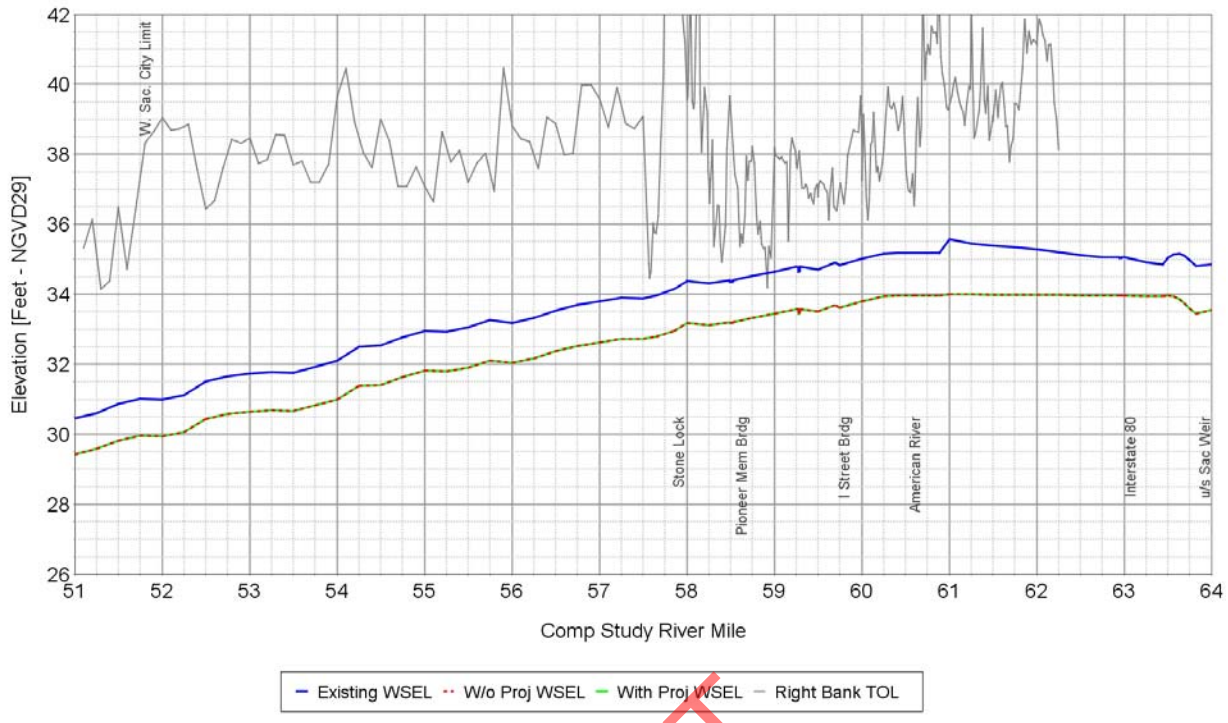


Figure 8. Comparison of 1-in-200 Year Water Surface Profiles - Sacramento River

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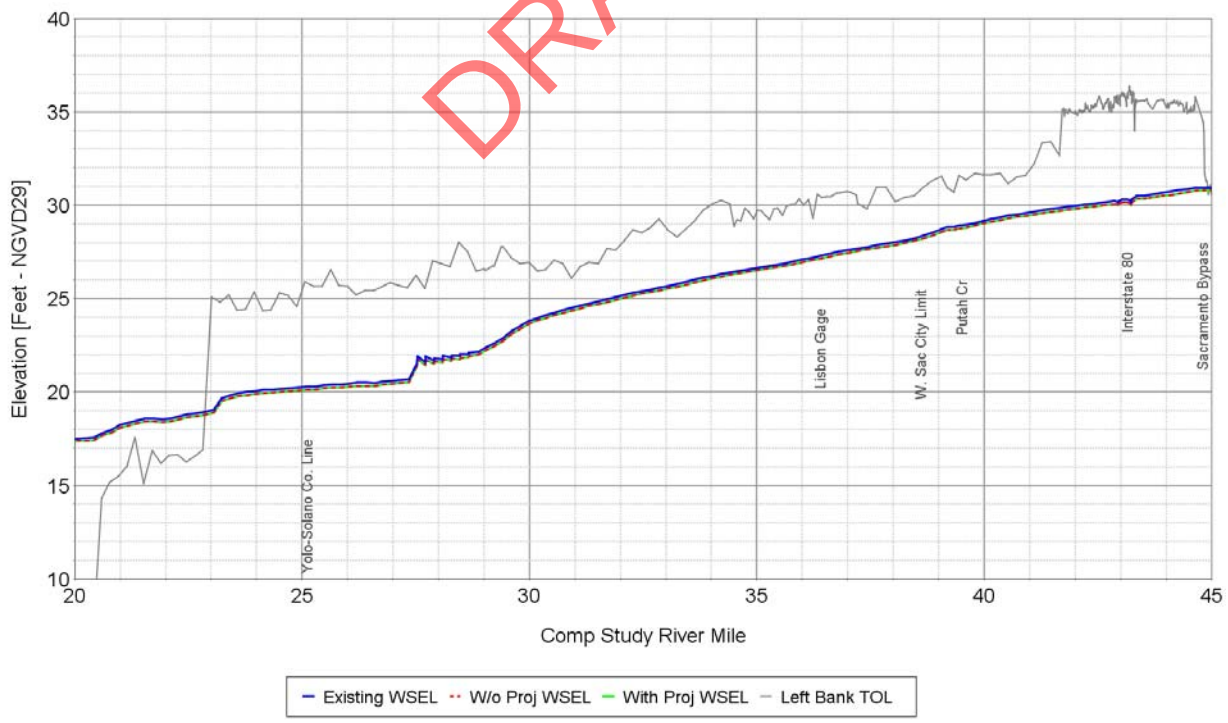


Figure 9. Comparison of 1-in-200 Year Water Surface Profiles - Yolo Bypass

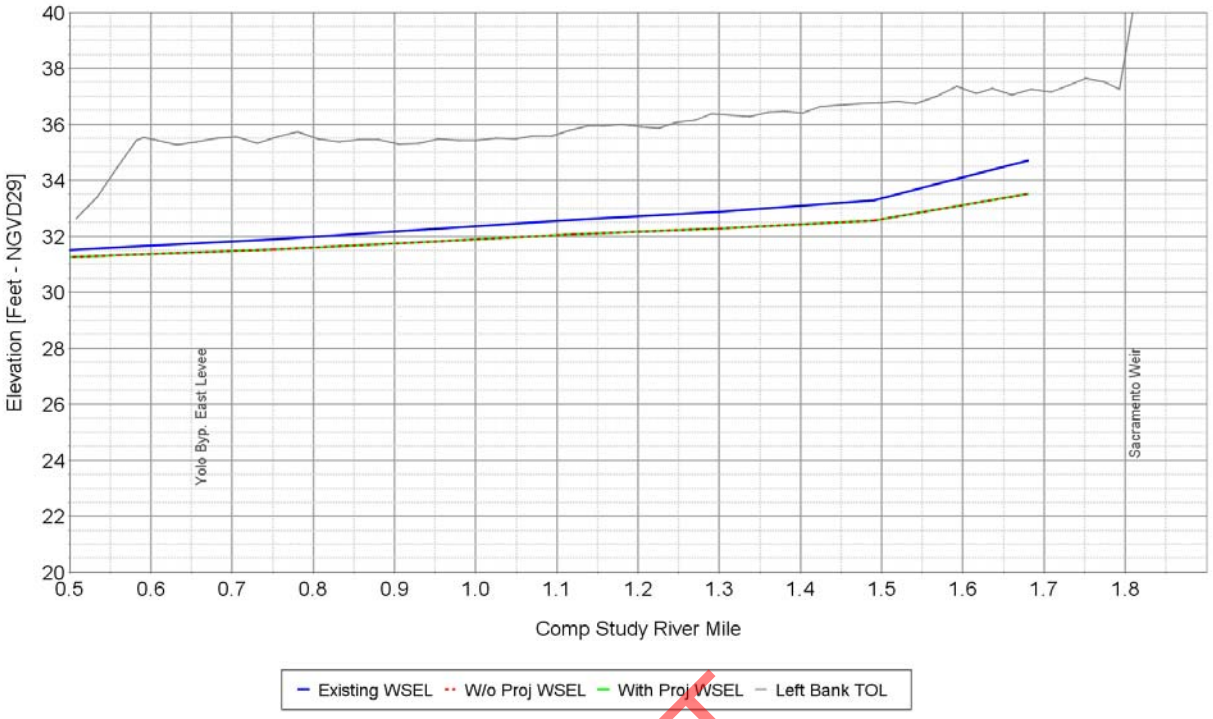


Figure 10. Comparison of 1-in-200 Year Water Surface Profiles - Sacramento River

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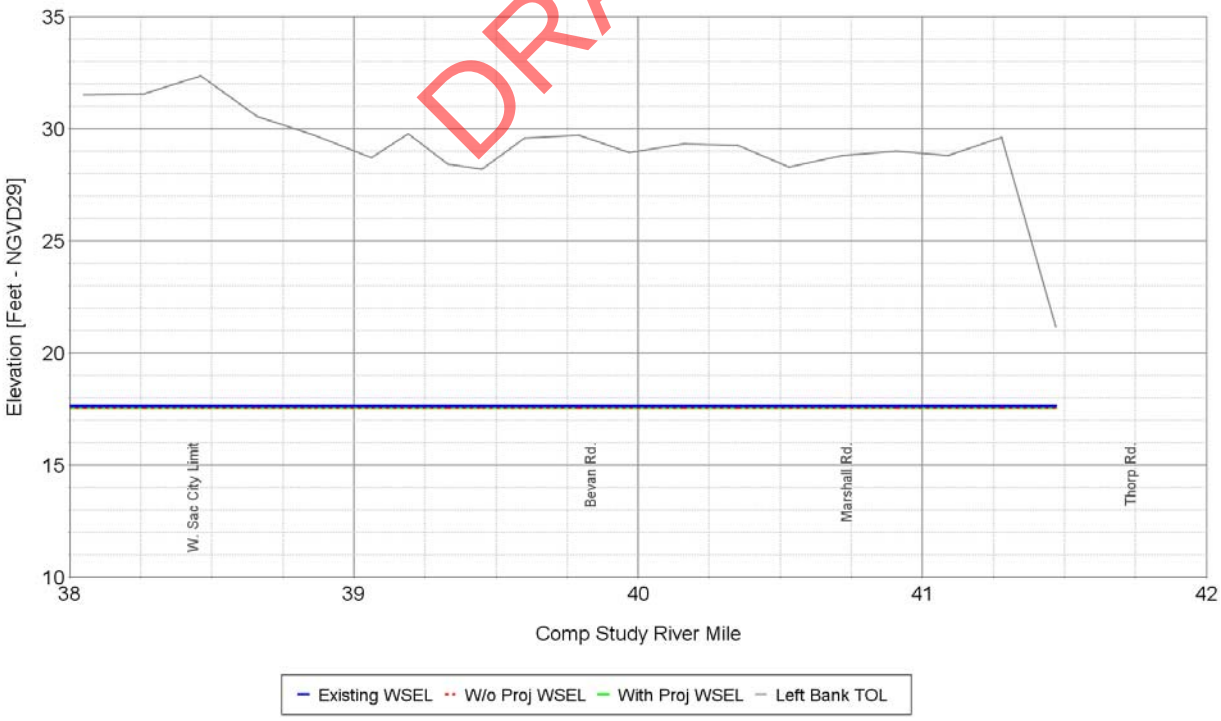


Figure 11. Comparison of 1-in-200 Year Water Surface Profiles - Sacramento Ship Channel

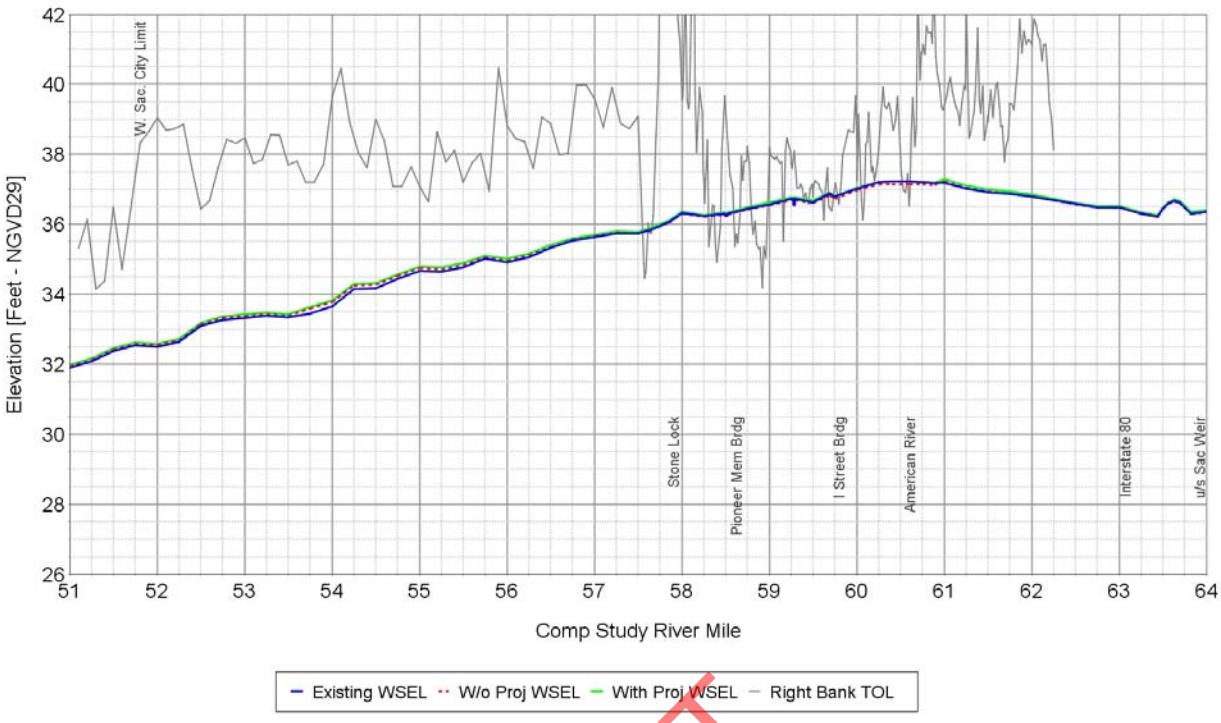


Figure 12. Comparison of 1-in-500 Year Water Surface Profiles - Sacramento River

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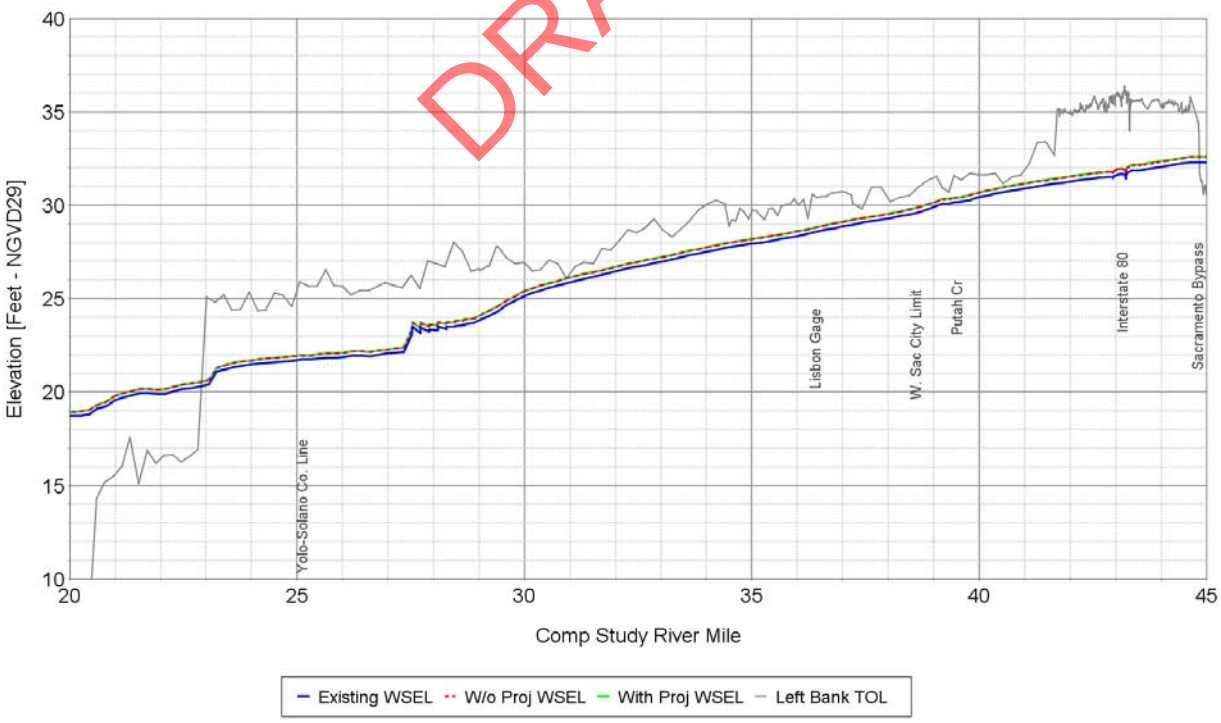


Figure 13. Comparison of 1-in-500 Year Water Surface Profiles – Yolo Bypass

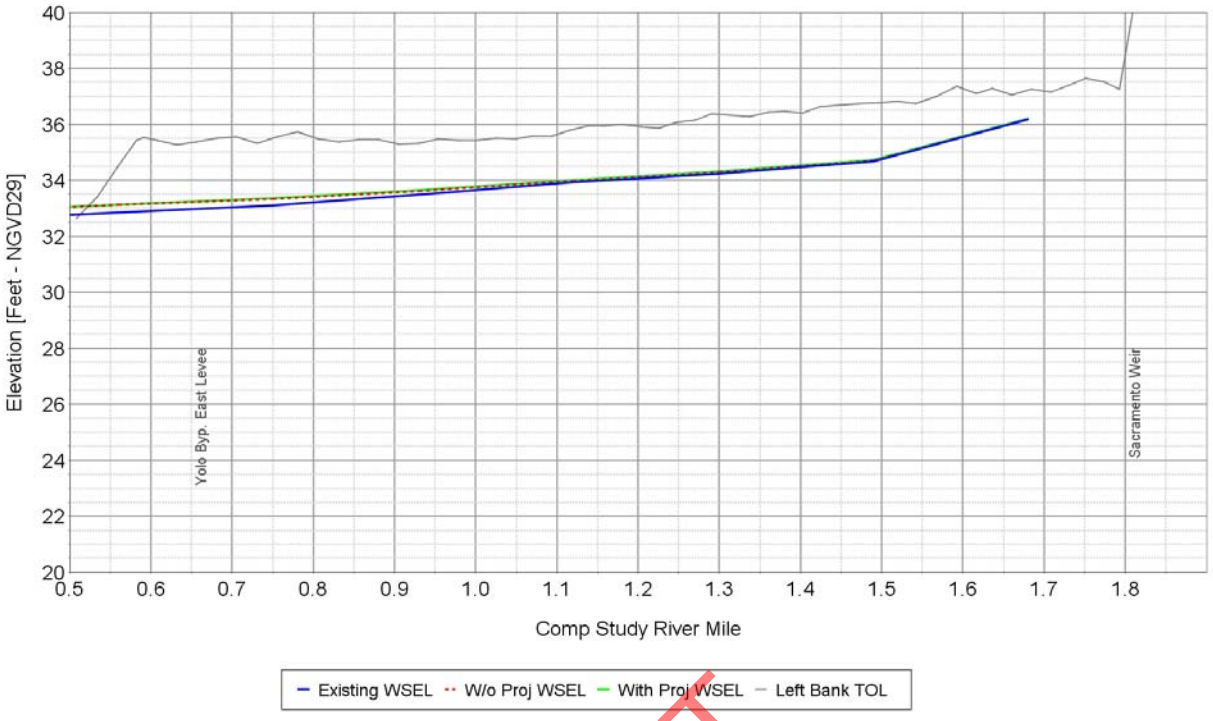


Figure 14. Comparison of 1-in-500 Year Water Surface Profiles – Sacramento Bypass

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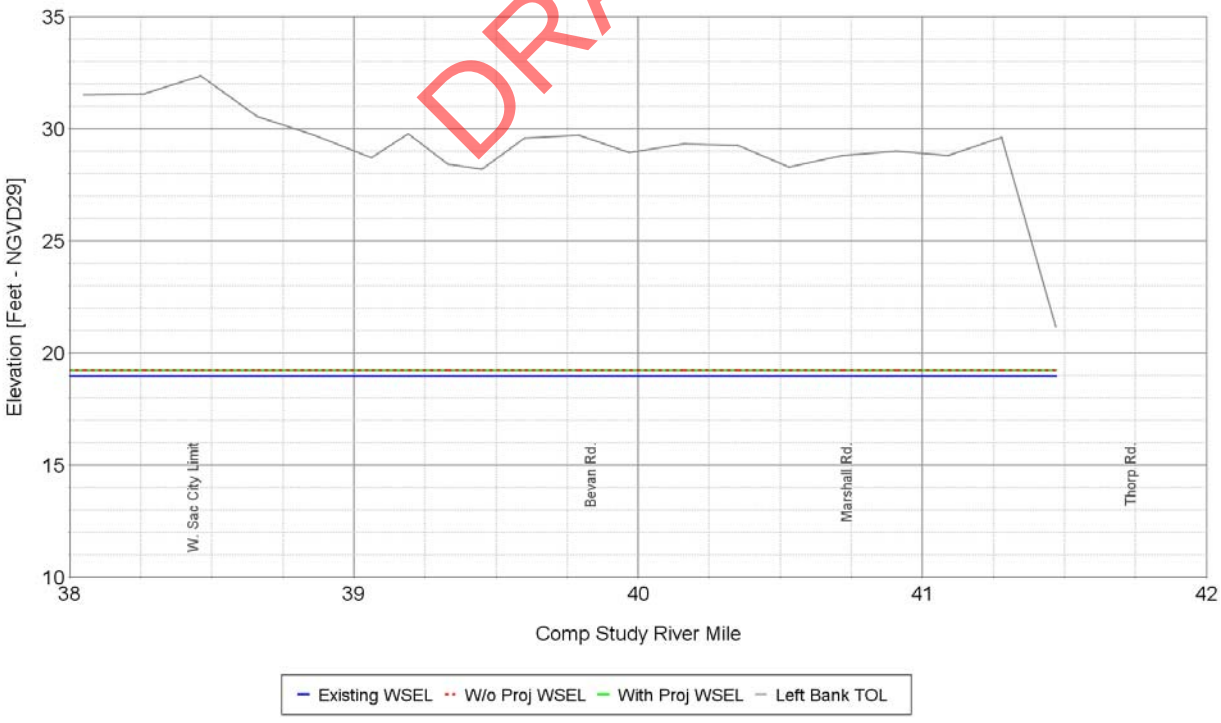


Figure 15. Comparison of 1-in-500 Year Water Surface Profiles – Sacramento Ship Channel

5. Support for Impact Analysis Methodology

5.1 California Legislature

Support for the hydraulic impact analysis for the WSLIP described herein has been given by the State Legislature to a similarly constructed hydraulic impact analysis developed for the Sacramento Area Flood Control Association (SAFCA) for a project consisting of levee strengthening and raising components similar to those in the WSLIP.

Consistent with its approval of a new more rigorous standard for urban flood protection, the State Legislature approved "the project features necessary to provide a 200-year level of flood protection along the American and Sacramento Rivers and within the Natomas Basin as described in the final engineer's report dated April 19, 2007, adopted by the SAFCA." (Statutes of 2007, Chapter 641 [amending Water Code Section 12670.14(b)]). Moreover, in connection with this approval, the legislature adopted the following findings and declarations (Statutes of 2007, Chapter 641, Section 1[k]):

> *As evidenced by the environmental impact reports certified in connection with these projects, including the hydrology and hydraulics impact analysis set forth in the environmental impact report prepared by the Sacramento Area Flood Control Agency with regard to local funding mechanisms for comprehensive flood control improvements for the Sacramento area dated February 2007, the increase in flood protection associated with improving the American and Sacramento River levees and modifying Folsom Dam will be accomplished without altering or otherwise impairing the design flows and water surface elevations prescribed as part of the Sacramento River Flood Control Project. Accordingly, these improvements will not result in significant adverse hydraulic impacts to the lands protected by the Sacramento River Flood Control Project. Thus, it is not necessary or appropriate to require these projects to include hydraulic mitigation.*
>
> *The projects authorized in Section 12670.14 of the Water Code will increase the ability of the existing flood control system in the lower Sacramento Valley to protect heavily urbanized areas within the City of Sacramento and the Counties of Sacramento and Sutter against very rare floods without altering the design flows and water surface elevations prescribed as part of the Sacramento River Flood Control Project or impairing the capacity of other segments of the Sacramento River Flood Control Project to contain these design flows and to maintain water surface elevations. Accordingly, the projects authorized in that section will not result in significant adverse hydraulic impacts to the lands protected by the Sacramento River Flood Control Project and neither the Reclamation Board nor any other state agency shall require the authorized projects to include hydraulic mitigation for these protected lands.*

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Although these findings are not legally binding, they indicate the legislature's concurrence with SAFCA's approach to analyzing hydraulic impacts. Additionally, Congress authorized raising and strengthening a twelve-mile reach of the Sacramento River east levee in the 1996 Water

Resources Development Act ("WRDA"), and for raising and strengthening all five-plus miles of the NCC south levee in the 1999 WRDA without in either case requiring hydraulic mitigation, offers additional indirect legislative support for SAFCA's approach.

The approach used in this hydraulic impact analysis for the WSLIP is similarly constructed and reported to that utilized by SAFCA.

5.2 U.S. Army Corps Headquarters

USACE has been using a risk-based analysis for economic evaluation for some time and has been moving to a risk-based analysis for system performance, largely for certification of levees for FEMA. However, in his memo dated *August 2, 2007, Subject: Section 408 Approval of a Flood Control Project Alteration - Sacramento River Flood Control Project, Feather and Yuba Rivers, California,* Deputy Director of Civil Works Steven L. Stockton indicated that the discussion of flood protection in terms such as 100-year or 200-year level of protection is acceptable to comply with NEPA and other environmental statues. However, a risk-based analysis as required by ER 1105-2-100 and ER 1105-2-101 will be needed to determine the terms of any eventual Section 104 reimbursement.

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6. Conclusion

Raising and strengthening portions the federal project levee system protecting West Sacramento and implementing in-channel erosion protection measures, as proposed by the City, would not result in any significant, adverse hydraulic impacts to other sub-basins protected as part of the SRFCP. Furthermore, these improvements would be consistent with the principles that have guided the management of the SRFCP over the past century and with the policies adopted by the State Legislature calling for an immediate and comprehensive effort to increase the level of flood protection provided to West Sacramento and the other urban areas within the SRFCP.

7. References

HDR Engineering "Alternatives Analysis: West Sacramento Area Flood Control Agency Levee Improvement Program" Administrative Draft, March 25, 2009.

MBK Engineers, "Hydraulic Impact Analysis of Cumulative Development in Sacramento River Corridor Floodway", June 27, 2005.

Appendix A

Sensitivity Analysis: Upstream Levees Fail When Overtopped

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A-1. Approach

It is unknown how upstream levees will perform for flood events of large magnitude, such as those utilized for this report (1-in-100 year, 1-in-200 year, and 1-in-500 year). The analysis presented in this report utilized the assumption that upstream levees would not fail when overtopped. This is a conservative assumption in terms of producing downstream water surface elevations, since water is not allowed to levee the riverine system due to levee failures. This appendix presents the results of the WSLIP hydraulic impact analysis with the upstream levee performance assumption that levees fail when overtopped.

Table A-1 defines the conditions analyzed and the various modeling assumptions that went with those conditions. As this table shows, an "Existing", "Without Project", and a "With Project" condition were analyzed.

Table A-1. Definition of Model Assumptions for Various Conditions

Condition	Top of Levee Assumption	Levee Failure Assumption	Reservoir Ops Assumption	Additional
Existing	Existing top of levee grade April 2008	No Levee Failure	Existing reservoirs and current (2008) operation criteria	
Without Project	Same as Existing with the following changes. Federally authorized improvements to Folsom Dam are implemented and urban area levees outside the West Sac Basin are assumed to have levees at 1-in-200 year water surface + three feet of freeboard. WSLIP levees same as Existing Condition.	Levees Fail When Overtopped	Same as Existing except Folsom Dam will be operated in accordance with the Joint Federal Project currently under construction	
With Project	Same as Without Project except WSLIP levees raised to design level (1-in-200 year water surface + three feet)	Levees Fail When Overtopped	Same as Without Project	In-channel erosion protection

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A-2. Results

Tables A-2, A-3 and A-4 summarize the maximum water surface elevations at several locations in and around the project area for the Existing, Without Project, and With Project conditions for the 1-in-100 year, 1-in-200 year and 1-in-500 year flood events, respectively. As these tabular results indicate, when upstream levees are allowed to fail, there are no impacts of the proposed WSLIP project calculated for events up to and including the 1-in-500 year flood.

Table A-5 summarizes the magnitude of levee failures for the 1-in-100 year, 1-in-200 year, and 1-in-500 year flood events.

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Table A-2. 1-in-100 Year Maximum Water Surface Elevation Summary, Upstream Levees Fail When Overtopped (Sensitivity Analysis)

Location (Comp Study River Mile)	Maximum Water Surface Elevation (ft. NGVD29)			Change (ft.)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
W. Sacramento city limit (63.44)	32.14	31.37	31.37	-0.77	0.00
American River (60.4)	32.19	31.37	31.37	-0.82	0.00
I St. Bridge (59.695)	31.92	31.10	31.10	-0.82	0.00
Stone Lock (57.86)	31.19	30.38	30.38	-0.81	0.00
Linden Road (56)	30.30	29.51	29.51	-0.79	0.00
Davis Road (54.75)	29.87	29.08	29.08	-0.79	0.00
W. Sacramento city limit (51.75)	28.22	27.46	27.46	-0.76	0.00
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	31.68	30.85	30.85	-0.83	0.00
Yolo Bypass east levee (0.56)	29.43	29.22	29.22	-0.21	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	29.01	28.88	28.88	-0.13	0.00
SPRR Bridge (43.24)	28.41	28.27	28.27	-0.14	0.00
Interstate 80 (42.96)	28.32	28.18	28.18	-0.14	0.00
Navigation Levee north end (41.65)	28.00	27.86	27.86	-0.14	0.00
W. Sacramento city limit (38.46)	26.44	26.30	26.30	-0.14	0.00
Lisbon Gage (36.2)	25.45	25.32	25.32	-0.13	0.00
Babel Slough (34.02)	24.47	24.35	24.35	-0.12	0.00
Clarksburg Road (31.89)	23.33	23.20	23.20	-0.13	0.00
Hamilton Road (29.42)	20.96	20.83	20.83	-0.13	0.00
Port of Sacramento					
SA 236	15.59	15.46	15.46	-0.13	0.00
Sacramento Ship Channel					
Marshall Road (40.72)	15.59	15.46	15.46	-0.13	0.00
W. Sacramento city limit (38.46)	15.59	15.46	15.46	-0.13	0.00

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Table A-3. 1-in-200 Year Maximum Water Surface Elevation Summary, Upstream Levees Fail When Overtopped (Sensitivity Analysis)

Location (Comp Study River Mile)	Maximum Water Surface Elevation (ft. NGVD29)			Change (ft.)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
W. Sacramento city limit (63.44)	33.87	32.99	32.99	-0.88	0.00
American River (60.4)	34.51	33.12	33.12	-1.39	0.00
I St. Bridge (59.695)	34.21	32.85	32.85	-1.36	0.00
Stone Lock (57.86)	33.48	32.12	32.12	-1.36	0.00
Linden Road (56)	32.52	31.22	31.22	-1.30	0.00
Davis Road (54.75)	32.09	30.80	30.80	-1.29	0.00
W. Sacramento city limit (51.75)	30.35	29.14	29.14	-1.21	0.00
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	33.65	32.62	32.62	-1.03	0.00
Yolo Bypass east levee (0.56)	30.75	30.38	30.38	-0.37	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	30.02	29.84	29.84	-0.18	0.00
SPRR Bridge (43.24)	29.40	29.24	29.24	-0.16	0.00
Interstate 80 (42.96)	29.30	29.13	29.13	-0.17	0.00
Navigation Levee north end (41.65)	28.96	28.81	28.81	-0.15	0.00
W. Sacramento city limit (38.46)	27.32	27.20	27.20	-0.12	0.00
Lisbon Gage (36.2)	26.26	26.16	26.16	-0.10	0.00
Babel Slough (34.02)	25.24	25.14	25.14	-0.10	0.00
Clarksburg Road (31.89)	24.05	23.96	23.96	-0.09	0.00
Hamilton Road (29.42)	21.60	21.51	21.51	-0.09	0.00
Port of Sacramento					
SA 236	16.20	16.01	16.01	-0.19	0.00
Sacramento Ship Channel					
Marshall Road (40.72)	16.19	16.02	16.02	-0.17	0.00
W. Sacramento city limit (38.46)	16.19	16.01	16.01	-0.18	0.00

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Table A-4. 1-in-500 Year Maximum Water Surface Elevation Summary, Upstream Levees Fail When Overtopped (Sensitivity Analysis)

Location (Comp Study River Mile)	Maximum Water Surface Elevation (ft. NGVD29)			Change (ft.)	
	Existing	Without Project	With Project	Existing to Without Project	Without Project to With Project
Sacramento River					
W. Sacramento city limit (63.44)	34.73	34.78	34.66	+0.05	-0.12
American River (60.4)	35.59	35.69	35.39	+0.10	-0.30
I St. Bridge (59.695)	35.26	35.36	35.03	+0.10	-0.33
Stone Lock (57.86)	34.47	34.59	34.18	+0.12	-0.41
Linden Road (56)	33.43	33.55	33.17	+0.12	-0.38
Davis Road (54.75)	33.00	33.12	32.74	+0.12	-0.38
W. Sacramento city limit (51.75)	31.17	31.29	30.94	+0.12	-0.35
Sacramento Bypass					
Downstream of Sac. Weir (1.68)	34.63	34.71	34.52	+0.08	-0.19
Yolo Bypass east levee (0.56)	31.29	31.33	31.33	+0.04	0.00
Yolo Bypass					
W. Sacramento city limit (44.6)	30.42	30.49	30.49	+0.07	0.00
SPRR Bridge (43.24)	29.78	29.85	29.85	+0.07	0.00
Interstate 80 (42.96)	29.66	29.74	29.74	+0.08	0.00
Navigation Levee north end (41.65)	29.31	29.39	29.39	+0.08	0.00
W. Sacramento city limit (38.46)	27.66	27.68	27.68	+0.02	0.00
Lisbon Gage (36.2)	26.60	26.58	26.58	-0.02	0.00
Babel Slough (34.02)	25.58	25.59	25.59	+0.01	0.00
Clarksburg Road (31.89)	24.38	24.45	24.45	+0.07	0.00
Hamilton Road (29.42)	21.90	22.17	22.17	+0.27	0.00
Port of Sacramento					
SA 236	16.66	16.93	16.93	+0.27	0.00
Sacramento Ship Channel					
Marshall Road (40.72)	16.66	16.93	16.93	+0.27	0.00
W. Sacramento city limit (38.46)	16.66	16.93	16.93	+0.27	0.00

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Table A-5. Levee Failure Summary (Number of Levee Failures)[1]

Condition	1-in-100 Year	1-in-200 Year	1-in-500 Year
Existing	8	50	119
Without Project	8	23	125
With Project	8	23	125

[1] Results displayed are for the Sacramento River storm centering

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Appendix B

Quality Control Certification

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MBK ENGINEERS

Quality Control Certification
for
Hydraulic Impacts of the
West Sacramento Levee Improvement Project

Certification of Internal Quality Control

I hereby certify that I have reviewed the hydraulic analysis and results described in the June 18, 2009, report on the *Hydraulic Impacts of the West Sacramento Levee Improvement Project* and that it adequately addresses hydrology and hydraulics of the described project.

Michael Archer, P.E., MBK Engineers — June 18, 2009 Date

DRAFT

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. ARCHER
No. 040485
Exp. 3/31/11
CIVIL
STATE OF CALIFORNIA

Appendix D

Utility Assessment for Basin-Wide Problem Identification Report, HDR, Inc.

UTILITY ASSESSMENT FOR BASIN-WIDE PROBLEM IDENTIFICATION REPORT

West Sacramento Levee Evaluation Project ***October 29, 2007***

Reviewed by: Eric Nagy, PE; Michael Vecchio MV 10/25/07

Prepared by: Brett Bourgeois, EIT

1. Introduction

The City of West Sacramento goal is to provide the community with the maximum feasible level of flood protection that can be justified within State and Federal standards. The minimum acceptable level of protection being sought by the City is for protection from a 200-year flood event. This is a flood that has a 1 in 200 or 0.5% chance of occurring in any given year.

HDR Engineering, Inc. (HDR) is leading a team of consultants in evaluating the levee system that provides flood protection to the City of West Sacramento. The study area associated with this evaluation is shown on Figure 1. Evaluation components include the following:

- Problem identification for the existing levees
- Alternatives analysis of various potential levee improvement methods
- Preliminary cost estimates associated with those improvements

The problem identification phase includes an assessment of the following:

- Geotechnical conditions
- Levee freeboard and geometry
- Existing utility crossings
- Erosion

Supplementary studies in potential environmental and cultural resources impacts and risk analysis have also been initiated.

2. Objective

The objective of this technical memorandum is to identify the existing underground and aboveground utility crossings as described in encroachment permits obtained from the State of California Reclamation Board.

3. Background

The City of West Sacramento has embarked upon a comprehensive evaluation of the flood protection infrastructure that surrounds the City. The City is bound on all four sides by a levee system that protects the region from flooding. The pursuit of a comprehensive evaluation of these levees is a necessary step toward determining the level of flood protection currently afforded by the existing flood protection infrastructure.

The initial step in conducting a comprehensive evaluation of the West Sacramento levee system is to identify the magnitude and severity of deficiencies in the current system. The collection and analysis of the engineering data necessary to identify and characterize these deficiencies within the West Sacramento levee system is currently underway. The findings of this initial phase will be captured in a Problem Identification Report.

Levee deficiencies identified during the problem identification phase will be studied further in the alternatives analysis phase. During this step, potential levee improvement alternatives for each identified deficiency will be formulated and compared against selection criteria for the recommendation of a preferred levee improvement alternative. This step includes preliminary technical evaluation, preliminary environmental assessment and the development of cost estimates for each alternative to ensure that the investment of public funds in any levee improvement project is efficient and effective. The findings of this phase will be captured in an Alternatives Analysis Report.

Both the problem identification phase and the alternatives analysis phase will serve as the basis for further technical evaluations to determine the economic impacts and environmental consequences of the various levee improvement alternatives versus their associated costs.

4. Study Area

The current comprehensive levee evaluation extends over the entire West Sacramento basin. This basin encompasses portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (DWSC). The levee system associated with these waterways includes over 50 miles of levees in Reclamation District (RD) 900, RD 537, Maintenance Area 4, and the Deep Water Ship Channel.

4.1. Study Reach Descriptions

For the purposes of this project, the West Sacramento basin levees have been split into nine reaches. Each reach described in this section is shown on Figure 1. A physical description of each reach follows:

4.1.1. Sacramento River West North Levee

This reach extends along the right bank of the Sacramento River from its confluence with the Sacramento Bypass downstream approximately 6.0 miles to the entrance to the barge canal.

4.1.2. Sacramento River West South Levee

This reach extends along the right bank of the Sacramento River from the entrance of the barge canal downstream approximately 6.4 miles to the South Cross Levee.

4.1.3. Port North Levee

This reach includes the combination of levees, structures, and high ground that exist along the northern bank of the barge canal and deep water ship channel from the Sacramento River west to the levee along the left bank of the Yolo Bypass. This area includes the ground surrounding the Port of Sacramento's turning basin.

4.1.4. Port South Levee

This reach includes the combination of levees and high ground that exist along the southern bank of the barge canal and deep water ship channel from the Sacramento River west to the levee on the east bank of the deep water ship channel.

4.1.5. South Cross Levee

This reach extends along the South Cross levee for approximately 1.2 miles from the intersection of Jefferson Boulevard and the levee along the east bank of the deep water ship channel to the Sacramento River where it intersects the southern limit of Sacramento River South Levee reach.

4.1.6. DWSC East Levee

This reach extends along the east bank of the deep water ship channel for approximately 2.8 miles from the high ground comprising the western limit of the Port South Levee reach in a southerly direction to the intersection of Jefferson Boulevard with the South Cross Levee.

4.1.7. DWSC West Levee

This reach extends along the left bank of the Yolo Bypass approximately 22 miles from its intersection with the western limit of the Port North Levee in a southerly direction toward Miners Slough.

4.1.8. Yolo Bypass Levee

This reach extends along the left bank of the Yolo Bypass approximately 3.8 miles from its intersection with the left bank levee of the Sacramento Bypass in a southerly direction to its intersection with the DWSC West Levee.

4.1.9. Sacramento Bypass Levee

This reach extends along the left bank of the Sacramento Bypass approximately 1.2 miles from the Sacramento Weir in a westerly direction (downstream) to its confluence with the left bank levee of the Yolo Bypass. This reach does not include the training levee that extends in a westerly direction approximately 0.4 miles into the Yolo Bypass.

5. Utility Inventory and Assessment

5.1. Utility Inventory

As part of the problem identification phase for the City of West Sacramento levee system, an initial review and assessment of the known levee utility crossings has been completed. The purpose of the utility assessment is two-fold: 1) to locate the known utilities and to identify potential conflicts with levee improvements alternatives and 2) to verify that the existing utility crossings meet with the requirements of the Federal Emergency Management Agency (FEMA) and the Reclamation Board.

A general assessment of the utilities within the basin has been completed by obtaining encroachment permits that contain underground and aboveground utilities which are contained in, on, or above the current levee footprint from the Reclamation Board. It should be noted that construction has been completed and utilities have been installed without proper permitting through the Reclamation Board; therefore only a general assessment has been performed. A detailed assessment will be completed during the project design phase. Encroachment permits that have been obtained from the Reclamation Board which contain underground utilities are summarized in Table 1. Encroachment permits that have been obtained from the Reclamation Board which contain aboveground utilities are summarized in Table 2. Figure 2 shows the levee reaches and the stationing convention for each levee reach.

5.2. Utility Assessment

A complete listing of all permitted utilities can be found in Tables 1 and 2. Permits are not required for utilities installed in the South Cross Levee because it is not a Federally-authorized levee. The tables also show the elevations of the underground utilities, and whether they are above or below the 100-year flood level. According to the requirements of the Reclamation Board (California Code of Regulations, Title 23, Article 8, Section 123), pipes that cross the levees shall have invert elevations above the 100-year water surface (i.e., the pipe should cross within the levee freeboard area) unless otherwise noted, and pipes open to the waterway should have a means of positive shut off.

For the underground utilities shown below the 100-year flood elevation, additional design may be required to make them comply with Reclamation Board requirements. For reaches where a cutoff wall is the preferred alternative, pipes crossing the levee will either have to be protected in place, or will have to be plugged while construction occurs and then reassembled after the cutoff wall construction. Temporary pipes may also be required during construction.

Temporary removal of overhead lines crossing the levee may be required for the cutoff wall option to provide adequate clearance for construction machinery. For the seepage berm option, poles within the working area may have to be relocated off the berm per United States Army Corps of Engineers requirements, or may have to be modified when relocations is not an option.

6. Summary

A general utility inventory and assessment was preformed by obtaining permits that contain underground and overhead utilities which are contained in, on, or over the current levee footprint from the Reclamation Board. The findings of those permits are presented in the attached Tables. It is important to note that there possibly exist utilities that are not identified in the permits from the Reclamation Board, in addition to the possibility that utilities are inaccurately located due to poor copies of permits. A detailed inventory of utilities, including obtaining and reviewing available as-built drawings, will be completed as part of the design phase of the project.

Figure 1

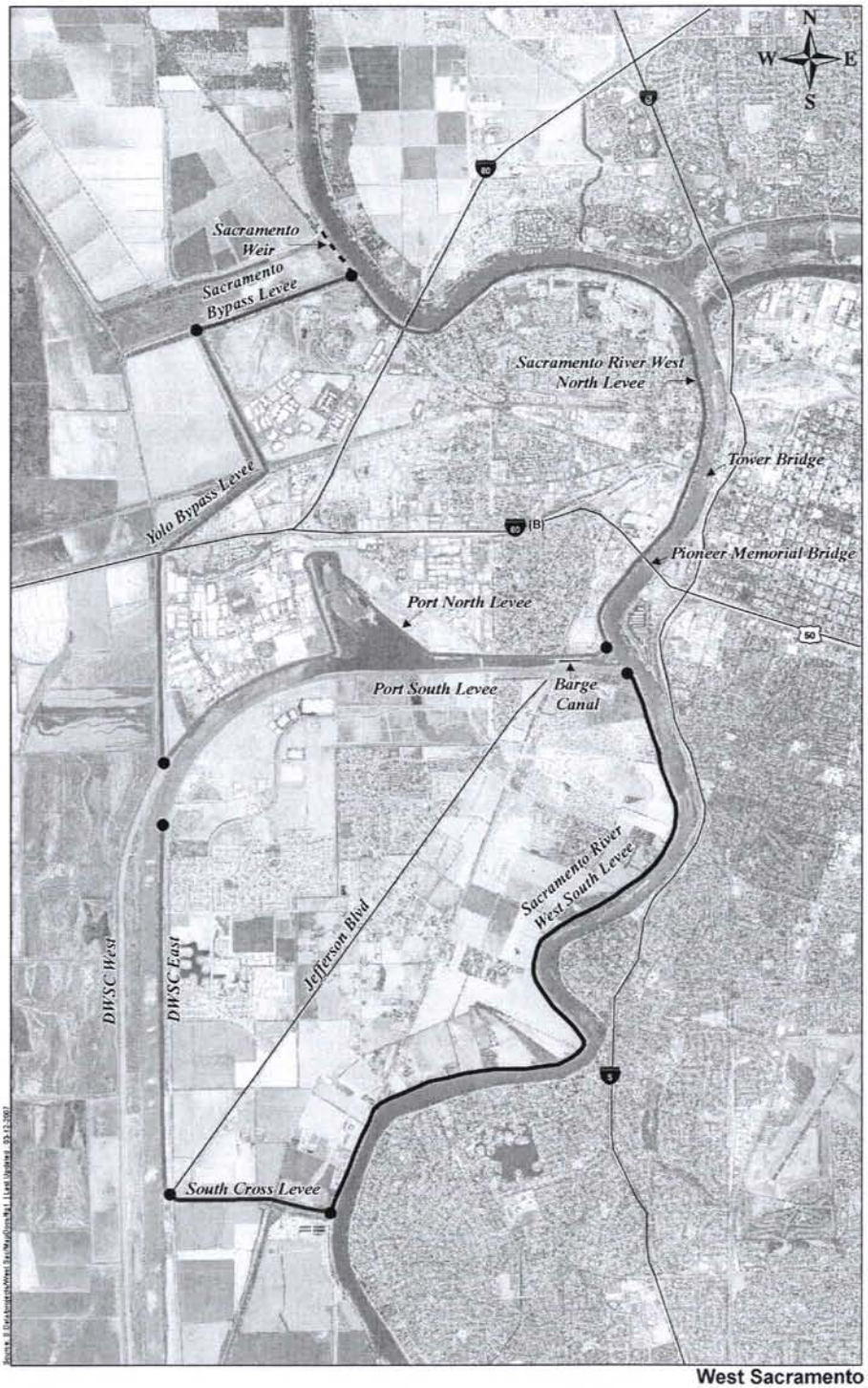
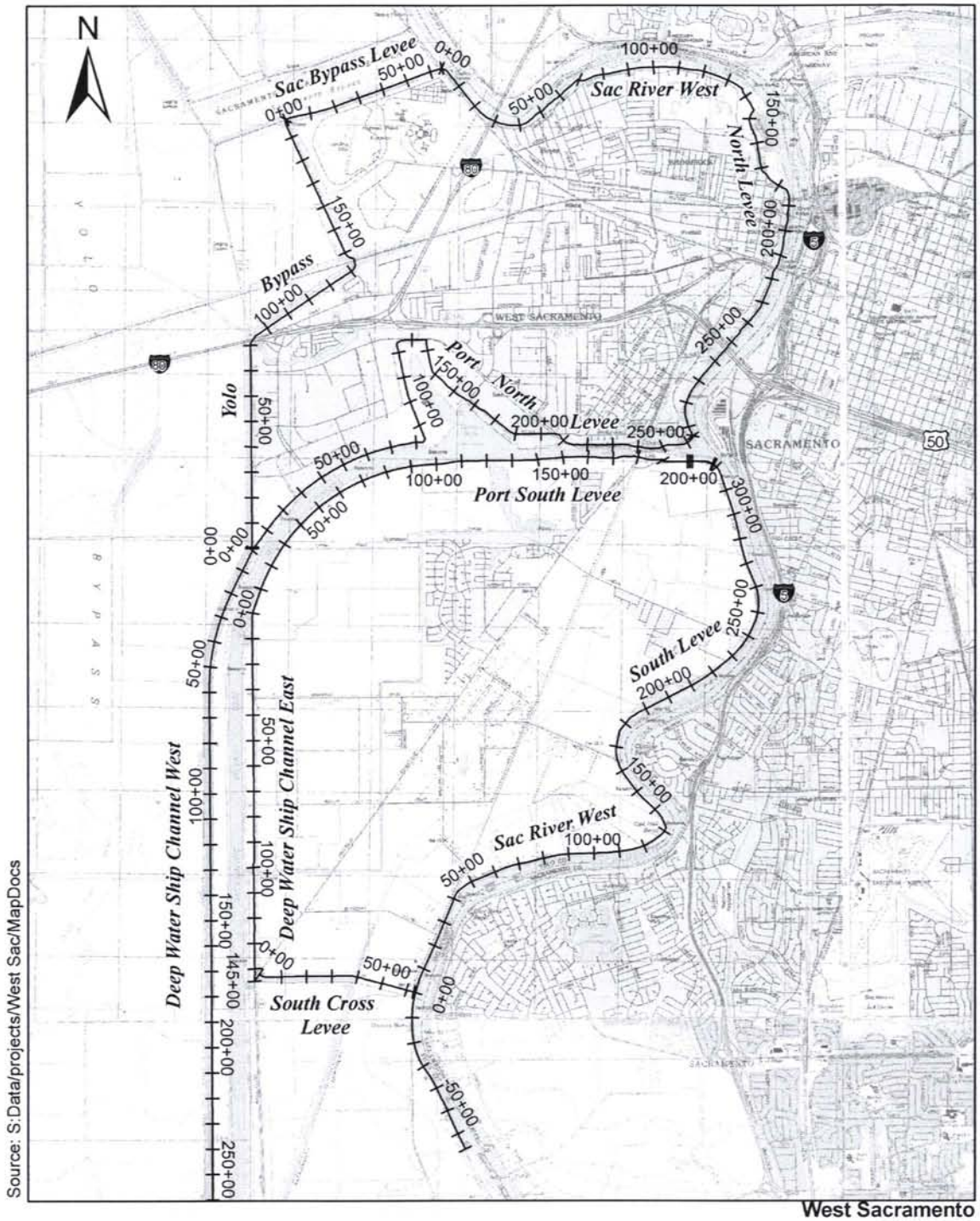

N
W
E
S
Sacramento Weir
Sacramento Bypass Levee
Sacramento River West North Levee
Tower Bridge
Yolo Bypass Levee
Pioneer Memorial Bridge
Port North Levee
Port South Levee
Barge Canal
Sacramento River West South Levee
DWSC West
DWSC East
Jefferson Blvd
South Cross Levee
West Sacramento
Project 1

Figure 2



West Sacramento
FIGURE 2

HDR
ONE COMPANY | *Many Solutions*

Table1

Reach	Maintenance Responsibility	Unit #	Levee Mile	Approximate Project Station	Reclamation Board Permit No.	Utility	Owner	Pipe Diameter (in.)	Type	Depth Below Crown (ft)	Levee Crown Elevation1	Utility Elevation	100 Year WSE2	Utility Contained in Freeboard?	Extra Information
Sacramento River West North Levee	RD 537	1	4.24	06+79	3923	Septic Tank and Piping	DWR	6"	Clay						Septic tank connect with clay pipe
	RD 537	1	4.3	09+70		Pipeline		12		15.1		-		-	Gate valve and pump house on waterside slope
	RD 537	1	4.52	20+36	5171	High Pressure Gas	PG&E	(2) 12"	Steel						2 - 12" pipes 10' apart
	RD 537	1	4.52	20+36	5171	Gas Lines	PG&E	(2) 12 3/4"		4		-		-	5x6 valve box on landside toe
	RD 537	1	4.57	22+79		Pipeline		4		-		-		-	Abandoned pipe through levee at low elevation. Cap welded at waterside ended.
	RD 537	1	4.65	26+67	14540	Pipeline	RD 537	(6) 24"	steel pipe	2'					install 6-24" steel pipe
	RD 537	1	4.68	28+12	14539	Pipeline	RD 537	42"	water intake pipe	5'					install a 42" raw water intake steel pipe
	RD 537	1	4.76	32+00	16296	Irrigation System	RD 537	-	-	-					install an irrigation system on the right bank of sac river
	RD 537	1	4.76	32+00	14542	Pipeline	RD 537	24"		23		-		-	Abandon pipeline and filled with pressure grout
	MA 4		0.41	54+13	2912	Storm Drain	DWR	6"	Galvanized Iron						
	MA 4	1	0.57	62+76	12864	Metal Pipe	DWR	48"	Metal pipe						install a stream gaging station on the right bank of the Sacramento River at DWR Bryte Maintenanc Yard
	MA 4	1	1.7	123+75	5526	Electrical Conduit	G. W. Williams Company	2"		18" - 30"	42.5 USED		34.4 USED		
	MA 4	1	2.15	148+04	2679	Gas Tank	River View Yatch Club	2000-gallon tank	Gas Tank			Bottom of tank at 34.4 USED	34.4 USED		
	MA 4	1	2.39	160+99	3761	Water Treatment Facility	Washington Water and Light Company		Many above and underground tanks and pipes						Need to get As-Builts
	MA 4	1	2.39	160+99	9279	Water Well	E.E. Luhdorff Company	30"		Vertical pipe 134' deep					Part of Watertreatment Plant, need As-Builts
	MA 4	1	2.4	161+53	4561	High Pressure Gas Main	PG&E	2"	Steel	Minimum 30"					
	MA 4	1	2.40 - 2.50	161+53 - 166+93	4532	Waterline	Washington Water and Light Company	10"	Steel	3'	40.0 USED	37.0 USED	34.4 USED	Yes	
	MA 4	1	2.48	165+85	14854	Storm Drain	Raley's Landing, Inc.	36"	Steel	7'	37.5 USGS	30.1 USGS	34.6 USGS		
	MA 4	1	2.6 - 3.4	172+32 - 215+50	16702	Irrigation and Portable Water Main	City of West Sacramento	(1) 4", (1) 1"							Need As-Builts, part of West Sacramento Riverfront Improvements
	MA 4	1	2.71	178+26	14903	Pipelines	City of West Sacramento	(2) 42", (2) 30", (1) 10"		12.9		-		-	Levee raised to provide adequate cover
	MA 4	1	2.73	179+34	14903	Pipe Cluster	City of West Sacramento	(2) 42", (2) 30", (1) 10", (1) 72"		Min 5.7'	41.1 NGVD	Min 35.4 NGVD	35.2 NGVD		Fill raised levee crown, need As-Builts
	MA 4	1	2.75	180+42	5844	Waterline	Washington Water and Light Company	4"	Asbestos cement	33"	41.2 USED	38.4 USED	34.4 USED		
	MA 4	1	2.76	180+96	14527	Pipeline	Southern Pacific Pipe Lines	12"		4'	37.5 USGS	33.5 USGS	31.2 USGS		
	MA 4	1	3.1	199+31	2075	Telephone Conduit	PT&T	2		5		-		-	
	MA 4	1	3.1	199+31	7117	Conduits	PT&E	(24) 1"		15		-		-	Special designed cutoff wall
	MA 4	1	3.17	203+09	17058	Conduits	World Wide Fiber	(3) 2" or (3) 1"		-					conduits containing fiber optic cables
	MA 4	1	3.17	203+09	17058	Conduits	World Wide Fiber	(2) 1.5"							
	MA 4	1	3.24	206+86	14854	Storm Drain Pipe		36		-		-		-	Siphon breaker at landside shoulder.
	MA 4		3.25	207+40	4668	Discharge Pipe	County of Yolo, Dept. PW	30"	Steel						
	RD 900	1	0.02	216+48	17024	Cfiber Optic cable	Kiewit Pacific	10"	fiber optic						
	RD 900	1	0.78	253+77	14732	Gas Line	PG&E	24	High Pressure	25'		-		-	
	RD 900	1	1.03	266+03	11727	Pipeline	Shell Oil	6		3		-		-	Outfall pump on landside
	RD 900	1	1.06	268+49	14211	Storm Drain Pipe		36"		4'					reinforced concrete storm drain pipe
	RD 900	1	1.23	275+85	-	Pipeline	Citizens Utilities Co.	8		1.5		-		-	Pipeline, well and pump plant on landside
	RD 900	1	1.3	279+28	3397	Blow Off Pipe	Washington Water & Light	8"							
	RD 900	1	1.4	284+19	15222	Pipeline	City of West Sacramento	(4) 72"		5'					
	RD 900	1	1.4	284+19	15222	Pipeline	City of West Sacramento	30"		8.6'					
	RD 900	1	1.47	287+62	7009	Sewage pipeline	West Sacto S.D.	18		5		-		-	Outfall line from W. Sac Sewage Plant
	RD 900	1	1.5	289+09	3827	Navigation Light	Sacramento - Yolo Port District	(1) 2", (1) 1/2"	Electrical Duct	2'					Navigation Light with electrical wires connected to it
	RD 900	1	1.55	291+55	2508	Drain Pipe	Morris P. Kirk & Son, Inc.	2"		12"					Waste drain pipe
	RD 900	1	1.59	293+51	2508	Waste outfall line	Sacto. - Yolo P.D.	3		2		-		-	Waste outfall line from Morris Kirk and Son
	RD 900	1	1.79 - 2.41	303+32 - 333+74	4914	Oil Pipeline	Standard Oil Company	8"	Steel	Ranges from 12" - 6'	40.0 USED	at or above flood elevation	30.5 USED	Yes	Pipe runs parallel to levee and crosses levee, need as builts to locate
	RD 900				2596	Storm Sewer	Ideal Cement Co.	24"	Reinforced Concrete						Reinforced cutoff wall at outlet

Reach	Maintenance Responsibility	Unit #	Levee Mile	Approximate Project Station	Reclamation Board Permit No.	Utility	Owner	Pipe Diameter (in.)	Type	Depth Below Crown (ft)	Levee Crown Elevation1	Utility Elevation	100 Year WSE2	Utility Contained in Freeboard?	Extra Information
Sacramento Bypass Levee	RD 785	2	1.1	59+13	14673	Communiations Cable	AT&T	4"	Steel or PVC	at least 4'					
	RD 537	2	1.10 - 1.12	59+13 - 60+21	17254	Fiber Opitic Conduits	AT&T	6"		85'					
	DWR	2	1.17	62+90	7616	Telephone Conduit	PT&T	1.5		23.5		-		-	
	DWR	2	1.18	63+43		Culvert		30	Concrete	23.5		-			24" Pipe sleeved through 30" conduit with concrete grout. Screw gate in concrete well on waterside shoulder
	DWR	2	1.2	64+51	11826	Pipeline	RD 537	36		2		-			Steel pipe pump structure and pump house on landside slope with vertical pump
	DWR	2	1.21	65+05	3056	Pipeline		42		23.5		-			Pump house on a pipe structure in drainage ditch. Siphon breaker in 18" CMP riser on landside slope, flag gate on waterside
Yolo Bypass Levee	RD 900	2	2	50+02	9688	Pumps	Andco Farms								Irrigation Pumps near levee toe - no mention of underground pipes
	RD 900	2	0.95	85+14	2444, 2893	Gas Line	PG&E	16	High Pressure	3		-		-	
	RD 900	2	1.06	90+90	16721	Pipelines	DWR	(2) 30"	Steel	at least 24"		above 29.3 NGVD			
	RD 900	2	1.05	91+34	11539	Gas Line	PG&E	16	High Pressure	3.5		-		-	
	RD 900	2	1.05	91+34	-	Pipeline	-	54		30		-		-	Abandoned, with Slide gate
	RD 900	2	1.05	91+34	2721	Pipeline	RD 900	(2) 30"	Corrugated Metal	5		-		-	Pump house, siphon breakers
	RD 900	2	1.05	91+34	13599	Pipeline	RD 900	(2) 30"		-		-		-	
	RD 900	2	1.05	91+34	2721	Pipeline	RD 900	(2) 10"	Corrugated Metal	4.7		-		-	
	RD 900	1	1 - 3	93+51 - 06+53	16311	Gas	SMUD	20"	Steel						Runs parallel to the levee near the toe drain
	RD 900	2	0.2	126+08	10972	Pipeline	RD 900	30	Corrugated Metal	5		-		-	
	RD 537	2	1.28	132+26	5859	Pipeline	S.P. Pipe Lines	14		-		-		-	
	RD 537	2	1.19 - 1.23	134+89 - 137+00	14082	Discharge Pipes	Kaiser Development Co.	(3) 42"	Steel	6.3'	35.8 USED	29.5 USED	29.5 USED		
	RD 900	2	0.01	136+45	15730	Communications Conduit	Pacific Bell	4"		2' - 6'	34.7 USED	above 28.6 USED	28.6 USED	Yes	Additional Permits 6381 and 6382
	RD 537	2	1.2	136+47	16309	Natural Gas	PG&E	20		-		-		-	
	RD 537	2	1.19	137+00	16311	Gas	SMUD	20"	Steel						Crosses under or through the levee
	RD 537	2	1.19	137+00	17258	Fiber Opitic Cables	Williams Communication	10"		at least 30'					
	RD 537	2	1.19	137+00	17143	Fiber Opitic Cables	Williams Communication	5"	Steel	al least 50'					
	RD 900	2	0	137+00	16722	Pipes	RD 900	(2) 30"	Steel	9.7'	35.6 NGVD	29.5 NGVD	29.5 NGVD		
	RD 537	2	1.18	137+53	5859	Pipeline	S.P. Pipe Lines	14		5		-		-	
	RD 537	1	0.02	196+59	17024	Fiber Opitic Cables	Level 1 Communiations	10"		Min. 30' below levee toe					
Port North Levee	RD 900				9630	Power Cable	PG&E				21.0 USED	above 18.0 USED	18.0 USED	Yes	
	RD 900	1	1.4-1.5		15222	Waste Water Treatment	City of West Sacramento	(4) 72", (2) 60", (1) 30"			39.0 USGS	27.89 USGS	30.5 USGS	No	
Port South Levee															
Sacramento River West South Levee	RD 900	1	7.84	00+00	17734	Temporary Pipes	Sacramento Regional County Sanitation	(2) 10"	Steel						HDR made the plans. Could have been removed, but no mention.
	RD 900	1	6.58	41+11	5136	Water Pipe	John C. Johnson	2"	Galvanized	3'	39 USED	36 USED	31.3 USED	Yes	
	RD 900	1	6.83 - 7.84	51+40 - 00+00	15760	Direct Burial Cable	Pacific Bell		Cable	36"					
	RD 900	1	3.75	210+00	3409	Bar with Septic Tank and Water Line	George M. Vashloz								Was constructed, an additional structure was built without a permit, no mention of depth or location of underground utilities

Reach	Maintenance Responsibility	Unit #	Levee Mile	Approximate Project Station	Reclamation Board Permit No.	Utility	Owner	Pipe Diameter (in.)	Type	Depth Below Crown (ft)	Levee Crown Elevation1	Utility Elevation	100 Year WSE2	Utility Contained in Freeboard?	Extra Information
DWSC East	RD 900	2	3.28	14+87	2721A	Pipeline	RD 900	30	Corrugated Metal	3	28.3	25.3		Yes	Pump house and siphon breaker on waterside slope
	RD 900	2	3.67	35+59	17070	Storm Drain Pipes	DWR	12", (4) 30"	Steel	at least 24"		above 21.5 NGVD	21.5	Yes	
	RD 900	2	4.97	104+63	12780	Pipelines	RD 900	(2) 48", (2) 30", (1) 42"		12.9	28.6	15.7		Yes	Pump house on landside, siphon breaker on waterside
	RD 900	2	4.98	105+16	4257	Drainage Pipe	DWR	48"	Steel	12.9'	33.5 USED	20.6 USED			
	RD 900	2	5.6	138+10	14584	Mobile home, well and utilities	Kay Bell and William Furtado				28.3 NGVD		14.9 NGVD		
	RD 900	2	5.72	144+47	4914AB	Pipeline	Standard Oil	8		3.5	29.6	26.1		Yes	Pipe marker on waterside shoulder
DWSC West	RD 900	2	3 - 7.5	05+99 - 275+91	16311	Gas	SMUD	20"							Runs parallel to the levee next to toe drain
	RD 900	2	3.75	50+91	17651	Fish passage facility	DWR								Located in the toe drain west of DWSC West
	RD 999	1	2	285+00	16311	Gas	SMUD	20"	Steel	50'+					Crosses the under the levee and DWSC
	RD 999	1	2.1 - 2.4	302+29 - 321+26	16501	Gas	Sacramento Valley Pipeline Corporation	6"							10 feet off of levee toe
	RD 999	1	6	548+91	9800	Pump and discharge pipe	Channel Ranch	16"		2' cover over pipe					Pump and discharge pipe located on toe drain
South Cross Levee															

Table 2

Reach	Maintenance Responsibility	Unit #	Levee Mile	Approximate Project Station	Reclamation Board Permit No.	Utility	Owner	Extra Information
Sacramento River West North Levee	RD 537	1	4.19	04+36		Power Line		
	RD 537	1	4.20-4.76	04+85 - 32+00	4875	Aerial Cable	PT&T	
	RD 537	1	4.25	07+27	4875	Telephone Line	PT&T	Pole Line
	RD 537	1	4.37	13+09	5069	Power Line		
	RD 537	1	4.39 - 4.60	14+06 - 24+24	5069A	Powerline	PG&E	Looks to be removed
	RD 537	1	4.61	24+73	3356	Powerline	PG&E	Aboveground Powerlines
	MA 4	1	0.52	60+06		Power Line		
	MA 4	1	1.76 - 2.0	126+99 - 139+94	5509	Poleline	PG&E	
	MA 4	1	2.02	141+02	6546	12KV Poleline	PG&E	
	MA 4	1	2.08	144+26		Telephone and Power Lines		
	MA 4	1	2.13	146+96		Power Line		
	MA 4	1	2.15	148+04	8069	12KV Poleline	PG&E	
	MA 4	1	2.18	149+66		Power Line		
	MA 4	1	2.39	160+99		Power Line		
	MA 4	1	2.49	166+39		Telephone and Power Lines		
	MA 4	1	2.66	175+56		Power Line		
	MA 4	1	2.75	180+42	6071	Poleline	PG&E	
	MA 4	1	3.01	194+45		Power Line		
	MA 4		3.1	199+31	7107	Phoneline	PT&T	
	MA 4		3.16	202+55	3527	Phoneline	PT&T	Aboveground Phoneline
	MA 4		3.18	203+63	2700	Powerpole	PG&E	Aboveground Powerline
	RD 900	1	0.21	225+80	3923	Powerpole	PG&E	Powerpole
Sacramento Bypass Levee	DWR	2	0	00+00		Telephone and Power Lines		
Yolo Bypass Levee	RD 900	2	2.46	30+02	12105	12 kV Power lines	PG&E	
	RD 900	2	2.13	44+37	3121	12KV wire extention	PG&E	
	RD 900	2	1.84	56+98	9766	Power Line	PG&E	
	RD 900	2	0.96	84+59	5900	Power Line	PG&E	
	RD 900	2	1.01	93+08	5704	Aboveground Sign	Foster & Kleiser Co.	6 underground piles support the sign
	RD 900	2	0.22	124+99	11664	Powerline	PG&E	
	RD 900	2	0.01	136+45	2678	Telephone Line	PT&T	
	RD 537	2	1.2	136+47	3012	Pole Line	PG&E	
	RD 900	2	0	137+00		Power Line	PG&E	
	RD 537	2	1.13	140+16	15867	12KV wire extention	PG&E	
	RD 537	2	0.04	197+53		Power Line		

Reach	Maintenance Responsibility	Unit #	Levee Mile	Approximate Project Station	Reclamation Board Permit No.	Utility	Owner	Extra Information
Port North Levee								
Port South Levee								
Sacramento River West South Levee	RD 900	1	6.83 - 7.84	51+40 - 00+00	15760	Fix existing poles and add a new one	Pacific Bell	
	RD 900	1	5.4	127+50	11913	12KV Poleline	PG&E	
	RD 900	1	5.36	129+50	12076	Telephone Cable	PT&T	
	RD 900	1	3.75	210+00	3409A	Powerline	George M. Vashloz	Overhead line to bar
	RD 900	1	3.46	224+50	8535	12KV Poleline	PG&E	
DWSC East	RD 900	2	3.28	14+87		Power Line		
DWSC West	RD 900	2	5.6	161+71	12877	12KV Powerline	PG&E	
	RD 999	1	5.8-6.1	536+26 - 555+23	9865	12KV Powerline	PG&E	
	RD 999	1	6.5	580+52	10947	12KV Powerline	PG&E	
South Cross Levee								

Appendix E

Air Quality Information

Appendix E
Air Quality Information

Introduction

This appendix includes the modeling results for the air quality emissions for the CHP Academy EIP alternatives and The Rivers EIP alternatives.

To assist in the determination of effects, various quantitative models are available to predict emissions and particulate matter generation. Two such models are URBEMIS and SacRCEM. While SacRCEM has typically been used for other recent levee improvement projects in the Sacramento Valley, both models have been applied to simulate the project-level air quality effects of the WSLIP. Given the similarity in the architecture of the two models, for ROG, NO_X, and CO_2, the outputs from the two models are very similar and any variance is considered not statistically significant. WSAFCA has selected to use the results of URBEMIS for quantitative determination of effects, effect findings, and mitigation efficacy.

This appendix includes the construction assumption and results tables of both the models for the WSLIP EIPs:

- **Mitigated construction emissions.** Construction emissions results tables for CHP Academy EIP Applicant Preferred Alternative (referred to as Alt 1 for modeling purposes), and Alternative B (referred to as Alt 2 for modeling purposes) and The Rivers EIP APA and Alternative B.
- **Unmitigated construction emissions.** Unmitigated construction emissions for both alternatives for CHP Academy and The Rivers, respectively.
- **Flood improvement data assumptions.** Construction data assumption tables for both alternatives for CHP Academy and The Rivers, respectively.
- **Recreation improvement data assumptions.** Construction data assumption tables for the recreational elements at the CHP Academy and The Rivers.
- **URBEMIS and SacRCEM results.** Four tables presenting side by side results of the URBEMIS and SacRCEM models for the APA and Alternative B for both CHP Academy EIP and The Rivers EIP, respectively.

WSLIP Construction Emissions Results URBEMIS and Sacramento RCEM

Tables E-1 through E-4, below, show the construction emissions results from the URBEMIS and Sacramento RCEM models for the CHP Academy EIP alternatives and The Rivers EIP alternatives.

Table E-1. Estimated Construction Emissions: CHP Academy APA, URBEMIS (U) and SacRCEM (S)

	ROG (tons/year)		NO_X (lbs/day)		NO_X (tons/year)		CO (tons/year)		PM10 (lbs/day)		PM10 (tons/year)		PM2.5 (tons/year)		CO2 (tons/year)	
Construction Emissions	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S
Project Construction without Mitigations																
Project-wide																
Maximum daily emissions	–		371	373	–		–		369	42	–		–		–	
Total annual Emissions	1.2	1.4	–		11.1	11.2	4.2	9.2	–		13.9	0.6	3.2	0.4	1,290	1,319
Within YSAQMD																
Maximum daily emissions	–		325	322	–		–		367	41	–		–		–	
Total annual Emissions	1.1	1.2	–		9.8	9.8	3.6	6.1	–		13.8	0.5	3.2	0.4	1,115	1,127
Within SMAQMD																
Maximum daily emissions	–		46	51	–		–		2	1.4	–		–		–	
Total annual emissions	0.1	0.2	–		1.3	1.4	0.6	3.1	–		0.1	0.05	0.1	0.04	174	192
Construction Thresholds																
Federal General Conformity (Project-wide emissions)	50		–		50		–		–		100		100		–	
YSAQMD (Emissions in YSAQMD)	10				10		–		80				–		–	
SMAQMD (Emissions in SMAQMD)	–		85		–		–		–		–		–		–	

Table E-2. Estimated Construction Emissions: CHP Academy Alternative B, URBEMIS(U) and SacRCEM (S)

	ROG (tons/year)		NO_X (lbs/day)		NO_X (tons/year)		CO (tons/year)		PM10 (lbs/day)		PM10 (tons/year)		PM2.5 (tons/year)		CO2 (tons/year)	
Construction Emissions	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S
Project Construction without Mitigations																
Project-wide																
Maximum daily emissions	–		261	273	–		–		285	26	–		–		–	
Total annual Emissions	0.5	0.7	–		5	5.8	1.8	4.6	–		5.7	0.3	1.3	0.2	577	687
Within YSAQMD																
Maximum daily emissions	–		226	233	–		–		285	25	–		–		–	
Total annual Emissions	0.5	0.6	–		4.8	4.5	1.7	3.0	–		5.7	0.3	1.3	0.2	543	576
Within SMAQMD																
Maximum daily emissions	–		35	40	–		–		0	1.4	–		–		–	
Total annual Emissions	0	0.1	–		0.2	1.3	0.1	1.6	–		0	0.04	0	0.03	34	111
Construction Thresholds																
Federal General Conformity (Project-wide emissions)	50		–		50		–		–		100		100		–	
YSAQMD (Emissions in YSAQMD)	10				10		–		80				–		–	
SMAQMD (Emissions in SMAQMD)	–		85		–		–		–		–		–		–	

Table E-3. Estimated Construction Emissions: The Rivers APA, URBEMIS (U) and SacRCEM (S)

	ROG (tons/year)		NO_X (lbs/day)		NO_X (tons/year)		CO (tons/year)		PM10 (lbs/day)		PM10 (tons/year)		PM2.5 (tons/year)		CO2 (tons/year)	
Construction Emissions	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U
Project Construction without Mitigations																
Project-wide																
Maximum daily emissions	–		494	494	–		–		372	35.5	–		–		–	
Total annual Emissions	1.6	1.9	–		15.4	15.4	5.7	10.6	–		12.4	0.8	3.0	0.6	1,786	1,824
Within YSAQMD																
Maximum daily emissions	–		448	444	–		–		370	34.3	–		–		–	
Total annual Emissions	1.5	1.6	–		14	14	5	7.4	–		12.3	0.7	3	0.5	1,589	1,606
Within SMAQMD																
Maximum daily emissions	–		47	50	–		–		2	1.2	–		–		–	
Total annual Emissions	0.1	0.3	–		1.4	1.5	0.7	3.2	–		0.1	0.1	0.1	0.1	197	218
Construction Thresholds																
Federal General Conformity (Project-wide emissions)	50		–		50		–		–		100		100		–	
YSAQMD (Emissions in YSAQMD)	10				10		–		80				–		–	
SMAQMD (Emissions in SMAQMD)	–		85		–		–		–		–		–		–	

Table E-4. Estimated Construction Emissions: The Rivers Alternative B, URBEMIS (U) and SacRCEM (S)

	ROG (tons/year)		NO_X (lbs/day)		NO_X (tons/year)		CO (tons/year)		PM10 (lbs/day)		PM10 (tons/year)		PM2.5 (tons/year)		CO2 (tons/year)	
Construction Emissions	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S
Project Construction without Mitigations																
Project-wide																
Maximum daily emissions	–		369	368	–		–		298	36	–		–		–	
Total annual Emissions	0.6	0.7	–		6	6.0	2.3	4.0	–		5	0.3	1.2	0.2	702	702
Within YSAQMD																
Maximum daily emissions	–		332	328	–		–		296	34	–		–		–	
Total annual Emissions	0.6	0.6	–		5.4	5.4	2	2.8	–		4.9	0.3	1.2	0.2	619	617
Within SMAQMD																
Maximum daily emissions	–		37	40	–		–		2	1.2	–		–		–	
Total annual Emissions	0	0.1	–		0.6	0.6	0.3	1.2	–		0.1	0.03	0	0.02	84	85
Construction Thresholds																
Federal General Conformity (Project-wide emissions)	50		–		50		–		–		100		100		–	
YSAQMD (Emissions in YSAQMD)	10				10		–		80				–		–	
SMAQMD (Emissions in SMAQMD)	–		85		–		–		–		–		–		–	

WSLIP CHP Academy Site (Bypass Levee Alt1)

Mitigated Construction Emissions (with AQ-MM-1a, 1b, and 2)

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Clearing and Grubbing	0.1	181.2	0.8	0.4	34.9	0.2	0.0	139
	Dust	0.00	0.00	0.00	0.00	29.48	0.13	0.03	0.0
	Off Road Diesel	0.09	138.48	0.62	0.28	3.57	0.02	0.01	96.3
	On Road Diesel	0.03	70.22	0.32	0.13	3.39	0.02	0.01	40.8
	Worker Trips	0.00	0.23	0.00	0.02	0.03	0.00	0.00	1.7
2	Concrete Removal	0.0	47.8	0.2	0.1	3.5	1.9	0.4	33
	Dust	0.00	0.00	0.00	0.00	2.52	1.85	0.39	0.0
	Off Road Diesel	0.03	54.99	0.19	0.09	1.46	0.01	0.00	30.4
	On Road Diesel	0.00	3.71	0.01	0.01	0.18	0.00	0.00	1.7
	Worker Trips	0.00	0.11	0.00	0.01	0.01	0.00	0.00	0.6
3	Levee Degrade	0.3	175.2	2.3	1.2	33.2	0.4	0.1	391
	Dust	0.00	0.00	0.00	0.00	27.95	0.36	0.08	0.0
	Off Road Diesel	0.25	129.77	1.69	0.75	3.30	0.04	0.04	266.4
	On Road Diesel	0.07	71.21	0.93	0.38	3.44	0.04	0.04	119.5
	Worker Trips	0.00	0.21	0.00	0.05	0.03	0.00	0.00	4.7
4	Slurry Wall Construction	0.1	29.2	0.4	0.3	15.8		0.1	78
	Dust	0.00	0.00	0.00	0.00	15.14	0.22	0.05	0.0
	Off Road Diesel	0.08	35.01	0.51	0.27	1.06	0.02	0.01	73.4
	On Road Diesel	0.00	1.08	0.02	0.01	0.05	0.00	0.00	2.0
	Worker Trips	0.00	0.09	0.00	0.02	0.01	0.00	0.00	2.2
5	Fill Placement	0.5	253.4	3.4	1.9	45.2	0.6	0.2	578
	Dust	0.00	0.00	0.00	0.00	37.82	0.51	0.11	0.0
	Off Road Diesel	0.41	201.42	2.72	1.25	5.35	0.07	0.07	409.3
	On Road Diesel	0.10	91.93	1.24	0.51	4.44	0.06	0.05	160.2
	Worker Trips	0.00	0.37	0.00	0.09	0.05	0.00	0.00	8.3
6	Concrete Placement	0.0	12.2	0.1	0.1	0.9	0.0	0.0	29
	Dust	0.00	0.00	0.00	0.00	0.63	0.01	0.00	0.0
	Off Road Diesel	0.03	13.50	0.16	0.08	0.37	0.00	0.00	25.2
	On Road Diesel	0.00	1.32	0.02	0.01	0.06	0.00	0.00	2.0
	Worker Trips	0.00	0.09	0.00	0.02	0.01	0.00	0.00	1.8
Recreation Improvement									
1	Grading	0.0	32.8	0.1	0.1	1.1	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.0
	Off Road Diesel	0.02	40.83	0.16	0.09	1.17	0.00	0.00	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
2	Install Pathways and Signs	0.0	19.8	0.1	0.1	0.6	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	23.40	0.14	0.09	0.98	0.01	0.01	18.8
	On Road Diesel	0.00	0.97	0.01	0.00	0.05	0.00	0.00	0.8
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	253	-	-	45	-	-	-
Total Annual Emissions		1.2	-	7.5	4.2	-	3.1	0.8	1290
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	207	-	-	43	-	-	-
Total Annual Emissions		1.0	-	6.2	3.5	-	3.0	0.8	1115
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	46	-	-	2	-	-	-
Total Annual Emissions		0.1	-	1.3	0.6	-	0.1	0.1	174
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP CHP Academy Site (Bypass Levee Alt2)

Mitigated Construction Emissions (with AQ-MM-2 only)

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Clearing and Grubbing	0.1	261.0	0.5	0.2	39.1	0.1	0.0	61
	Dust	0.00	0.00	0.00	0.00	28.59	0.06	0.01	0.0
	Off Road Diesel	0.04	191.67	0.38	0.12	7.15	0.01	0.01	42.8
	On Road Diesel	0.01	69.11	0.14	0.06	3.34	0.01	0.01	17.8
	Worker Trips	0.00	0.23	0.00	0.01	0.03	0.00	0.00	0.8
2	Excavate Stability Berm	0.1	260.8	0.7	0.2	38.6	0.1	0.0	77
	Dust	0.00	0.00	0.00	0.00	28.09	0.07	0.01	0.0
	Off Road Diesel	0.05	191.67	0.48	0.15	7.15	0.02	0.02	53.5
	On Road Diesel	0.01	68.94	0.17	0.07	3.33	0.01	0.01	22.3
	Worker Trips	0.00	0.23	0.00	0.01	0.03	0.00	0.00	1.0
3	Install Stability Berm and Drain System	0.3	208.1	3.2	1.1	37.6	0.6	0.2	367
	Dust	0.00	0.00	0.00	0.00	29.62	0.46	0.10	0.0
	Off Road Diesel	0.34	200.69	3.11	1.03	7.57	0.12	0.11	345.9
	On Road Diesel	0.01	7.11	0.11	0.05	0.34	0.01	0.00	14.2
	Worker Trips	0.00	0.26	0.00	0.08	0.04	0.00	0.00	6.7
4	Install Relief Wells	0.0	16.2	0.2	0.1	0.7	0.0	0.0	29
	Dust	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.0
	Off Road Diesel	0.02	15.46	0.17	0.06	0.60	0.01	0.01	27.5
	On Road Diesel	0.00	0.71	0.01	0.00	0.03	0.00	0.00	1.0
	Worker Trips	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.6
Recreation Improvement									
1	Grading	0.0	53.6	0.2	0.1	2.8	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.0
	Off Road Diesel	0.02	53.46	0.21	0.09	2.33	0.01	0.01	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
2	Install Pathways and Signs	0.0	33.5	0.2	0.1	2.0	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	32.38	0.19	0.09	1.95	0.01	0.01	18.8
	On Road Diesel	0.00	0.97	0.01	0.00	0.05	0.00	0.00	0.8
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	261	-	-	39	-	-	-
Total Annual Emissions		0.5	-	5.0	1.8	-	0.8	0.3	577
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	226	-	-	39	-	-	-
Total Annual Emissions		0.5	-	4.8	1.7	-	0.8	0.3	543
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	35	-	-	0	-	-	-
Total Annual Emissions		0.0	-	0.2	0.2	-	0.0	0.0	34
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP Rivers Site (Alt1)

Mitigated Construction Emissions (with with AQ-MM-1a, 1b, and 2)

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Road Demolition	0.0	53.9	0.1	0.0	12.3	0.7	0.1	10
	Dust	0.00	0.00	0.00	0.00	10.92	0.71	0.15	0.0
	Off Road Diesel	0.01	53.05	0.05	0.02	1.42	0.00	0.00	8.2
	On Road Diesel	0.00	11.26	0.01	0.00	0.54	0.00	0.00	1.5
	Worker Trips	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.3
2	Clearing and Grubbing	0.1	196.2	0.6	0.3	30.1	0.1	0.0	105
	Dust	0.00	0.00	0.00	0.00	24.85	0.07	0.02	0.0
	Off Road Diesel	0.08	172.07	0.52	0.23	4.40	0.01	0.01	81.1
	On Road Diesel	0.01	58.21	0.17	0.07	2.81	0.01	0.01	22.5
	Worker Trips	0.00	0.32	0.00	0.02	0.04	0.00	0.00	1.6
3	Levee Degrade	0.5	217.2	2.9	1.6	33.3	0.4	0.1	527
	Dust	0.00	0.00	0.00	0.00	27.37	0.37	0.08	0.0
	Off Road Diesel	0.38	187.23	2.53	1.13	4.74	0.06	0.06	402.8
	On Road Diesel	0.07	67.10	0.91	0.37	3.24	0.04	0.04	117.0
	Worker Trips	0.00	0.30	0.00	0.08	0.04	0.00	0.00	6.9
4	Slope Flattening	0.1	185.4	0.6	0.4	26.1	0.1	0.0	116
	Dust	0.00	0.00	0.00	0.00	21.26	0.07	0.02	0.0
	Off Road Diesel	0.09	168.98	0.59	0.27	4.37	0.02	0.01	91.7
	On Road Diesel	0.01	49.89	0.17	0.07	2.41	0.01	0.01	22.5
	Worker Trips	0.00	0.32	0.00	0.02	0.04	0.00	0.00	1.9
5	Slurry Wall Construction	0.1	29.7	0.3	0.2	8.1	0.1	0.0	52
	Dust	0.00	0.00	0.00	0.00	7.41	0.08	0.02	0.0
	Off Road Diesel	0.06	36.10	0.38	0.20	1.15	0.01	0.01	49.1
	On Road Diesel	0.00	0.74	0.01	0.00	0.04	0.00	0.00	1.0
	Worker Trips	0.00	0.09	0.00	0.02	0.01	0.00	0.00	1.6
6	DSM Wall Construction	0.0	7.1	0.2	0.2	0.3	0.0	0.0	25
	Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.04	7.97	0.18	0.14	0.44	0.01	0.01	21.2
	On Road Diesel	0.00	0.64	0.01	0.01	0.03	0.00	0.00	1.8
	Worker Trips	0.00	0.05	0.00	0.02	0.01	0.00	0.00	1.7
7	Fill Placement	0.8	324.8	5.0	2.8	46.3	0.7	0.2	889
	Dust	0.00	0.00	0.00	0.00	37.67	0.58	0.12	0.0
	Off Road Diesel	0.68	289.77	4.49	2.03	7.52	0.12	0.11	691.4
	On Road Diesel	0.11	92.54	1.43	0.59	4.47	0.07	0.06	185.2
	Worker Trips	0.00	0.47	0.01	0.14	0.07	0.00	0.00	12.3
8	Road Construction	0.0	29.2	0.0	0.0	0.7	0.0	0.0	6
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.01	32.80	0.03	0.02	0.96	0.00	0.00	5.0
	On Road Diesel	0.00	2.75	0.00	0.00	0.13	0.00	0.00	0.4
	Worker Trips	0.00	0.24	0.00	0.00	0.03	0.00	0.00	0.4
Recreation Improvement									
1	Clear and Pruning	0.0	31.0	0.1	0.1	1.7	0.0	0.0	14
	Dust	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.0
	Off Road Diesel	0.02	38.63	0.10	0.05	1.17	0.00	0.00	13.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.00	0.01	0.00	0.00	0.4
2	Grading	0.0	32.8	0.1	0.1	1.3	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.0
	Off Road Diesel	0.02	40.83	0.16	0.09	1.17	0.00	0.00	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
3	Install Pathways and Signs	0.0	20.1	0.1	0.1	0.6	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	23.40	0.14	0.09	0.98	0.01	0.01	18.8
	On Road Diesel	0.00	1.21	0.01	0.00	0.06	0.00	0.00	0.9
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	325	-	-	46	-	-	-
Total Annual Emissions		1.6	-	10.1	5.7	-	2.2	0.6	1786
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	278	-	-	44	-	-	-
Total Annual Emissions		1.5	-	8.7	5.0	-	2.1	0.6	1589
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	47	-	-	2	-	-	-
Total Annual Emissions		0.1	-	1.4	0.7	-	0.1	0.1	197
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP Rivers Site (Alt2)

Mitigated Construction Emissions (with AQ-MM-2 only)

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Road Demolition	0.0	84.8	0.1	0.0	14.3	0.7	0.2	10
	Dust	0.00	0.00	0.00	0.00	10.92	0.71	0.15	0.0
	Off Road Diesel	0.01	73.43	0.07	0.02	2.83	0.00	0.00	8.2
	On Road Diesel	0.00	11.26	0.01	0.00	0.54	0.00	0.00	1.5
	Worker Trips	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.3
2	Clearing and Grubbing	0.1	296.7	0.9	0.3	36.5	0.1	0.0	105
	Dust	0.00	0.00	0.00	0.00	24.85	0.07	0.02	0.0
	Off Road Diesel	0.08	238.16	0.71	0.23	8.80	0.03	0.02	81.1
	On Road Diesel	0.01	58.21	0.17	0.07	2.81	0.01	0.01	22.5
	Worker Trips	0.00	0.32	0.00	0.02	0.04	0.00	0.00	1.6
3	Slope Flattening	0.4	369.2	4.2	1.5	44.8	0.5	0.2	503
	Dust	0.00	0.00	0.00	0.00	30.33	0.35	0.07	0.0
	Off Road Diesel	0.37	294.61	3.39	1.10	10.83	0.12	0.11	385.5
	On Road Diesel	0.07	74.16	0.85	0.35	3.58	0.04	0.04	110.1
	Worker Trips	0.00	0.38	0.00	0.08	0.05	0.00	0.00	7.4
4	Sheet Pile Wall	0.0	22.4	0.2	0.1	1.2	0.0	0.0	21
	Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.02	17.41	0.17	0.09	0.99	0.01	0.01	14.6
	On Road Diesel	0.00	4.92	0.05	0.02	0.24	0.00	0.00	6.0
	Worker Trips	0.00	0.05	0.00	0.01	0.01	0.00	0.00	0.7
5	Road Construction	0.0	48.4	0.0	0.0	2.1	0.0	0.0	6
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.01	45.40	0.05	0.02	1.92	0.00	0.00	5.0
	On Road Diesel	0.00	2.75	0.00	0.00	0.13	0.00	0.00	0.4
	Worker Trips	0.00	0.24	0.00	0.00	0.03	0.00	0.00	0.4
Recreation Improvement									
1	Clear and Pruning	0.0	53.6	0.1	0.1	3.4	0.0	0.0	14
	Dust	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.0
	Off Road Diesel	0.02	53.46	0.13	0.05	2.33	0.01	0.01	13.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.00	0.01	0.00	0.00	0.4
2	Grading	0.0	53.6	0.2	0.1	3.0	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.0
	Off Road Diesel	0.02	53.46	0.21	0.09	2.33	0.01	0.01	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
3	Install Pathways and Signs	0.0	33.7	0.2	0.1	2.0	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	32.38	0.19	0.09	1.95	0.01	0.01	18.8
	On Road Diesel	0.00	1.21	0.01	0.00	0.06	0.00	0.00	0.9
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	369	-	-	45	-	-	-
Total Annual Emissions		0.6	-	6.0	2.3	-	1.4	0.5	702
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	332	-	-	43	-	-	-
Total Annual Emissions		0.6	-	5.4	2.0	-	1.4	0.4	619
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	37	-	-	2	-	-	-
Total Annual Emissions		0.1	-	0.6	0.3	-	0.0	0.0	84
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP CHP Academy Site and Rivers Site

Unmitigated Construction Emissions (CHP Alt1 + Rivers Alt1)

	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project-wide								
Maximum Daily Emissions	-	865	-	-	741	-	-	-
Total Annual Emissions	2.8	-	26.5	9.9	-	26.3	6.2	3076
General Conformity Construction Thresholds	50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	773	-	-	736	-	-	-
Total Annual Emissions	2.6	-	23.8	8.5	-	26.1	6.1	2704
YSAQMD Construction Thresholds	10	-	10	-	80	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	93	-	-	5	-	-	-
Total Annual Emissions	0.2	-	2.7	1.4	-	0.1	0.1	372
SMAQMD Construction Thresholds	-	85	-	-	-	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	100	-	-

Unmitigated Construction Emissions (CHP Alt2 + Rivers Alt1)

	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project-wide								
Maximum Daily Emissions	-	755	-	-	657	-	-	-
Total Annual Emissions	2.2	-	20.4	7.6	-	18.1	4.4	2363
General Conformity Construction Thresholds	50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	674	-	-	654	-	-	-
Total Annual Emissions	2.0	-	18.8	6.7	-	18.0	4.3	2132
YSAQMD Construction Thresholds	10	-	10	-	80	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	81	-	-	2	-	-	-
Total Annual Emissions	0.1	-	1.7	0.9	-	0.1	0.1	231
SMAQMD Construction Thresholds	-	85	-	-	-	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	100	-	-

Unmitigated Construction Emissions (CHP Alt1 + Rivers Alt2)

	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project-wide								
Maximum Daily Emissions	-	740	-	-	667	-	-	-
Total Annual Emissions	1.8	-	17.1	6.5	-	18.8	4.4	1992
General Conformity Construction Thresholds	50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	657	-	-	663	-	-	-
Total Annual Emissions	1.6	-	15.2	5.5	-	18.7	4.3	1734
YSAQMD Construction Thresholds	10	-	10	-	80	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	83	-	-	4	-	-	-
Total Annual Emissions	0.2	-	1.9	1.0	-	0.1	0.1	258
SMAQMD Construction Thresholds	-	85	-	-	-	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	100	-	-

Unmitigated Construction Emissions (CHP Alt2 + Rivers Alt2)

	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Project-wide								
Maximum Daily Emissions	-	630	-	-	583	-	-	-
Total Annual Emissions	1.2	-	11.0	4.1	-	10.7	2.5	1279
General Conformity Construction Thresholds	50	-	100	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	558	-	-	581	-	-	-
Total Annual Emissions	1.1	-	10.2	3.7	-	10.6	2.5	1162
YSAQMD Construction Thresholds	10	-	10	-	80	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)								
Maximum Daily Emissions	-	72	-	-	2	-	-	-
Total Annual Emissions	0.1	-	0.8	0.5	-	0.0	0.0	117
SMAQMD Construction Thresholds	-	85	-	-	-	-	-	-
General Conformity Construction Thresholds	-	-	-	-	-	100	-	-

WSLIP CHP Academy Site (Bypass Levee Alt1)

Unmitigated Construction Emissions

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Clearing and Grubbing	0.1	262.1	1.2	0.4	286.2	1.3	0.3	139
	Dust	0.00	0.00	0.00	0.00	275.60	1.24	0.26	0.0
	Off Road Diesel	0.09	191.67	0.86	0.28	7.15	0.03	0.03	96.3
	On Road Diesel	0.03	70.22	0.32	0.13	3.39	0.02	0.01	40.8
	Worker Trips	0.00	0.23	0.00	0.02	0.03	0.00	0.00	1.7
2	Concrete Removal	0.0	79.9	0.3	0.1	5.6	1.9	0.4	33
	Dust	0.00	0.00	0.00	0.00	2.52	1.85	0.39	0.0
	Off Road Diesel	0.03	76.12	0.27	0.09	2.91	0.01	0.01	30.4
	On Road Diesel	0.00	3.71	0.01	0.01	0.18	0.00	0.00	1.7
	Worker Trips	0.00	0.11	0.00	0.01	0.01	0.00	0.00	0.6
3	Levee Degrade	0.3	251.0	3.3	1.2	271.4	3.5	0.8	391
	Dust	0.00	0.00	0.00	0.00	261.30	3.40	0.71	0.0
	Off Road Diesel	0.25	179.62	2.34	0.75	6.61	0.09	0.08	266.4
	On Road Diesel	0.07	71.21	0.93	0.38	3.44	0.04	0.04	119.5
	Worker Trips	0.00	0.21	0.00	0.05	0.03	0.00	0.00	4.7
4	Slurry Wall Construction	0.1	49.6	0.7	0.3	143.8	2.1	0.5	78
	Dust	0.00	0.00	0.00	0.00	141.60	2.05	0.43	0.0
	Off Road Diesel	0.08	48.45	0.70	0.27	2.11	0.03	0.03	73.4
	On Road Diesel	0.00	1.08	0.02	0.01	0.05	0.00	0.00	2.0
	Worker Trips	0.00	0.09	0.00	0.02	0.01	0.00	0.00	2.2
5	Fill Placement	0.5	371.1	5.0	1.9	368.8	5.0	1.2	578
	Dust	0.00	0.00	0.00	0.00	353.58	4.77	1.00	0.0
	Off Road Diesel	0.41	278.79	3.76	1.25	10.69	0.14	0.13	409.3
	On Road Diesel	0.10	91.93	1.24	0.51	4.44	0.06	0.05	160.2
	Worker Trips	0.00	0.37	0.00	0.09	0.05	0.00	0.00	8.3
6	Concrete Placement	0.0	20.1	0.2	0.1	6.7	0.1	0.0	29
	Dust	0.00	0.00	0.00	0.00	5.87	0.07	0.01	0.0
	Off Road Diesel	0.03	18.69	0.22	0.08	0.74	0.01	0.01	25.2
	On Road Diesel	0.00	1.32	0.02	0.01	0.06	0.00	0.00	2.0
	Worker Trips	0.00	0.09	0.00	0.02	0.01	0.00	0.00	1.8
Recreation Improvement									
1	Grading	0.0	53.6	0.2	0.1	6.5	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	4.20	0.02	0.00	0.0
	Off Road Diesel	0.02	53.46	0.21	0.09	2.33	0.01	0.01	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
2	Install Pathways and Signs	0.0	33.5	0.2	0.1	2.0	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	32.38	0.19	0.09	1.95	0.01	0.01	18.8
	On Road Diesel	0.00	0.97	0.01	0.00	0.05	0.00	0.00	0.8
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	371	-	-	369	-	-	-
Total Annual Emissions		1.2	-	11.1	4.2	-	13.9	3.2	1290
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	325	-	-	367	-	-	-
Total Annual Emissions		1.0	-	9.8	3.5	-	13.8	3.2	1115
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	46	-	-	2.2	-	-	-
Total Annual Emissions		0.1	-	1.3	0.6	-	0.1	0.1	174
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP CHP Academy Site (Bypass Levee Alt2)

Unmitigated Construction Emissions

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Clearing and Grubbing	0.1	261.0	0.5	0.2	277.8	0.6	0.1	61
	Dust	0.00	0.00	0.00	0.00	267.30	0.53	0.11	0.0
	Off Road Diesel	0.04	191.67	0.38	0.12	7.15	0.01	0.01	42.8
	On Road Diesel	0.01	69.11	0.14	0.06	3.34	0.01	0.01	17.8
	Worker Trips	0.00	0.23	0.00	0.01	0.03	0.00	0.00	0.8
2	Excavate Stability Berm	0.1	260.8	0.7	0.2	273.1	0.7	0.2	77
	Dust	0.00	0.00	0.00	0.00	262.60	0.66	0.14	0.0
	Off Road Diesel	0.05	191.67	0.48	0.15	7.15	0.02	0.02	53.5
	On Road Diesel	0.01	68.94	0.17	0.07	3.33	0.01	0.01	22.3
	Worker Trips	0.00	0.23	0.00	0.01	0.03	0.00	0.00	1.0
3	Install Stability Berm and Drain System	0.3	208.1	3.2	1.1	284.9	4.4	1.0	367
	Dust	0.00	0.00	0.00	0.00	276.97	4.29	0.90	0.0
	Off Road Diesel	0.34	200.69	3.11	1.03	7.57	0.12	0.11	345.9
	On Road Diesel	0.01	7.11	0.11	0.05	0.34	0.01	0.00	14.2
	Worker Trips	0.00	0.26	0.00	0.08	0.04	0.00	0.00	6.7
4	Install Relief Wells	0.0	16.2	0.2	0.1	1.3	0.0	0.0	29
	Dust	0.00	0.00	0.00	0.00	0.70	0.01	0.00	0.0
	Off Road Diesel	0.02	15.46	0.17	0.06	0.60	0.01	0.01	27.5
	On Road Diesel	0.00	0.71	0.01	0.00	0.03	0.00	0.00	1.0
	Worker Trips	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.6
Recreation Improvement									
1	Grading	0.0	53.6	0.2	0.1	6.5	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	4.20	0.02	0.00	0.0
	Off Road Diesel	0.02	53.46	0.21	0.09	2.33	0.01	0.01	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
2	Install Pathways and Signs	0.0	33.5	0.2	0.1	2.0	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	32.38	0.19	0.09	1.95	0.01	0.01	18.8
	On Road Diesel	0.00	0.97	0.01	0.00	0.05	0.00	0.00	0.8
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	261	-	-	285	-	-	-
Total Annual Emissions		0.5	-	5.0	1.8	-	5.7	1.3	577
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	226	-	-	285	-	-	-
Total Annual Emissions		0.5	-	4.8	1.7	-	5.7	1.3	543
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	35	-	-	0	-	-	-
Total Annual Emissions		0.0	-	0.2	0.2	-	0.0	0.0	34
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP Rivers Site (Alt1)

Unmitigated Construction Emissions

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Road Demolition	0.0	84.8	0.1	0.0	14.3	0.7	0.2	10
	Dust	0.00	0.00	0.00	0.00	10.92	0.71	0.15	0.0
	Off Road Diesel	0.01	73.43	0.07	0.02	2.83	0.00	0.00	8.2
	On Road Diesel	0.00	11.26	0.01	0.00	0.54	0.00	0.00	1.5
	Worker Trips	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.3
2	Clearing and Grubbing	0.1	296.7	0.9	0.3	244.0	0.7	0.2	105
	Dust	0.00	0.00	0.00	0.00	232.31	0.70	0.15	0.0
	Off Road Diesel	0.08	238.16	0.71	0.23	8.80	0.03	0.02	81.1
	On Road Diesel	0.01	58.21	0.17	0.07	2.81	0.01	0.01	22.5
	Worker Trips	0.00	0.32	0.00	0.02	0.04	0.00	0.00	1.6
3	Levee Degrade	0.5	326.5	4.4	1.6	268.7	3.6	0.9	527
	Dust	0.00	0.00	0.00	0.00	255.94	3.46	0.72	0.0
	Off Road Diesel	0.38	259.14	3.50	1.13	9.49	0.13	0.12	402.8
	On Road Diesel	0.07	67.10	0.91	0.37	3.24	0.04	0.04	117.0
	Worker Trips	0.00	0.30	0.00	0.08	0.04	0.00	0.00	6.9
4	Slope Flattening	0.1	284.1	1.0	0.4	210.0	0.7	0.2	116
	Dust	0.00	0.00	0.00	0.00	198.80	0.70	0.15	0.0
	Off Road Diesel	0.09	233.88	0.82	0.27	8.75	0.03	0.03	91.7
	On Road Diesel	0.01	49.89	0.17	0.07	2.41	0.01	0.01	22.5
	Worker Trips	0.00	0.32	0.00	0.02	0.04	0.00	0.00	1.9
5	Slurry Wall Construction	0.1	50.8	0.5	0.2	71.6	0.8	0.2	52
	Dust	0.00	0.00	0.00	0.00	69.27	0.73	0.15	0.0
	Off Road Diesel	0.06	49.96	0.52	0.20	2.30	0.02	0.02	49.1
	On Road Diesel	0.00	0.74	0.01	0.00	0.04	0.00	0.00	1.0
	Worker Trips	0.00	0.09	0.00	0.02	0.01	0.00	0.00	1.6
6	DSM Wall Construction	0.0	11.7	0.3	0.2	0.9	0.0	0.0	25
	Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.04	11.03	0.24	0.14	0.87	0.02	0.02	21.2
	On Road Diesel	0.00	0.64	0.01	0.01	0.03	0.00	0.00	1.8
	Worker Trips	0.00	0.05	0.00	0.02	0.01	0.00	0.00	1.7
7	Fill Placement	0.8	494.1	7.7	2.8	371.8	5.8	1.4	889
	Dust	0.00	0.00	0.00	0.00	352.22	5.46	1.14	0.0
	Off Road Diesel	0.68	401.07	6.22	2.03	15.04	0.23	0.21	691.4
	On Road Diesel	0.11	92.54	1.43	0.59	4.47	0.07	0.06	185.2
	Worker Trips	0.00	0.47	0.01	0.14	0.07	0.00	0.00	12.3
8	Road Construction	0.0	48.4	0.0	0.0	2.1	0.0	0.0	6
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.01	45.40	0.05	0.02	1.92	0.00	0.00	5.0
	On Road Diesel	0.00	2.75	0.00	0.00	0.13	0.00	0.00	0.4
	Worker Trips	0.00	0.24	0.00	0.00	0.03	0.00	0.00	0.4
Recreation Improvement									
1	Clear and Pruning	0.0	53.6	0.1	0.1	11.7	0.0	0.0	14
	Dust	0.00	0.00	0.00	0.00	9.40	0.02	0.00	0.0
	Off Road Diesel	0.02	53.46	0.13	0.05	2.33	0.01	0.01	13.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.00	0.01	0.00	0.00	0.4
2	Grading	0.0	53.6	0.2	0.1	8.2	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	5.90	0.02	0.00	0.0
	Off Road Diesel	0.02	53.46	0.21	0.09	2.33	0.01	0.01	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
3	Install Pathways and Signs	0.0	33.7	0.2	0.1	2.0	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	32.38	0.19	0.09	1.95	0.01	0.01	18.8
	On Road Diesel	0.00	1.21	0.01	0.00	0.06	0.00	0.00	0.9
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	494	-	-	372	-	-	-
Total Annual Emissions		1.6	-	15.4	5.7	-	12.4	3.0	1786
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	448	-	-	370	-	-	-
Total Annual Emissions		1.5	-	14.0	5.0	-	12.3	3.0	1589
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	47	-	-	2	-	-	-
Total Annual Emissions		0.1	-	1.4	0.7	-	0.1	0.1	197
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

WSLIP Rivers Site (Alt2)

Unmitigated Construction Emissions

Phase	Phase of Construction	ROG (tons/year)	NOx (lb/day)	NOx (tons/year)	CO (tons/year)	PM10 (lbs/day)	PM10 (tons/year)	PM2.5 (tons/year)	CO2 (tons/year)
Flood Control Improvement									
1	Road Demolition	0.0	84.8	0.1	0.0	14.3	0.7	0.2	10
	Dust	0.00	0.00	0.00	0.00	10.92	0.71	0.15	0.0
	Off Road Diesel	0.01	73.43	0.07	0.02	2.83	0.00	0.00	8.2
	On Road Diesel	0.00	11.26	0.01	0.00	0.54	0.00	0.00	1.5
	Worker Trips	0.00	0.15	0.00	0.00	0.02	0.00	0.00	0.3
2	Clearing and Grubbing	0.1	296.7	0.9	0.3	244.0	0.7	0.2	105
	Dust	0.00	0.00	0.00	0.00	232.31	0.70	0.15	0.0
	Off Road Diesel	0.08	238.16	0.71	0.23	8.80	0.03	0.02	81.1
	On Road Diesel	0.01	58.21	0.17	0.07	2.81	0.01	0.01	22.5
	Worker Trips	0.00	0.32	0.00	0.02	0.04	0.00	0.00	1.6
3	Slope Flattening	0.4	369.2	4.2	1.5	298.1	3.4	0.8	503
	Dust	0.00	0.00	0.00	0.00	283.60	3.26	0.68	0.0
	Off Road Diesel	0.37	294.61	3.39	1.10	10.83	0.12	0.11	385.5
	On Road Diesel	0.07	74.16	0.85	0.35	3.58	0.04	0.04	110.1
	Worker Trips	0.00	0.38	0.00	0.08	0.05	0.00	0.00	7.4
4	Sheet Pile Wall	0.0	22.4	0.2	0.1	1.2	0.0	0.0	21
	Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.02	17.41	0.17	0.09	0.99	0.01	0.01	14.6
	On Road Diesel	0.00	4.92	0.05	0.02	0.24	0.00	0.00	6.0
	Worker Trips	0.00	0.05	0.00	0.01	0.01	0.00	0.00	0.7
5	Road Construction	0.0	48.4	0.0	0.0	2.1	0.0	0.0	6
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.01	45.40	0.05	0.02	1.92	0.00	0.00	5.0
	On Road Diesel	0.00	2.75	0.00	0.00	0.13	0.00	0.00	0.4
	Worker Trips	0.00	0.24	0.00	0.00	0.03	0.00	0.00	0.4
Recreation Improvement									
1	Clear and Pruning	0.0	53.6	0.1	0.1	11.7	0.0	0.0	14
	Dust	0.00	0.00	0.00	0.00	9.40	0.02	0.00	0.0
	Off Road Diesel	0.02	53.46	0.13	0.05	2.33	0.01	0.01	13.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.00	0.01	0.00	0.00	0.4
2	Grading	0.0	53.6	0.2	0.1	8.2	0.0	0.0	22
	Dust	0.00	0.00	0.00	0.00	5.90	0.02	0.00	0.0
	Off Road Diesel	0.02	53.46	0.21	0.09	2.33	0.01	0.01	21.3
	On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Worker Trips	0.00	0.09	0.00	0.01	0.01	0.00	0.00	0.6
3	Install Pathways and Signs	0.0	33.7	0.2	0.1	2.0	0.0	0.0	21
	Off Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	Off Road Diesel	0.03	32.38	0.19	0.09	1.95	0.01	0.01	18.8
	On Road Diesel	0.00	1.21	0.01	0.00	0.06	0.00	0.00	0.9
	Worker Trips	0.00	0.15	0.00	0.02	0.02	0.00	0.00	1.5
Project-wide									
Maximum Daily Emissions		-	369	-	-	298	-	-	-
Total Annual Emissions		0.6	-	6.0	2.3	-	5.0	1.2	702
General Conformity Construction Thresholds		50	-	50	-	-	-	-	-
Within YSAQMD (100% of Dust and Off-Road Diesel, and 50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	332	-	-	296	-	-	-
Total Annual Emissions		0.6	-	5.4	2.0	-	4.9	1.2	619
YSAQMD Construction Thresholds		10	-	10	-	80	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	-	100	-
Within SMAQMD (50% of On-road Diesel and Worker Trips)									
Maximum Daily Emissions		-	37	-	-	2	-	-	-
Total Annual Emissions		0.1	-	0.6	0.3	-	0.0	0.0	84
SMAQMD Construction Thresholds		-	85	-	-	-	-	-	-
General Conformity Construction Thresholds		-	-	-	-	-	100	-	-

CHP Academy
Sacramento Bypass Levee - Alt #1

	Model (Series) TYP.	HP	Duration (Days)	Fleet Size	Total Operation Hours	Daily Operation Hours	Daily Construction Area (Acres)	Total Construction Area (Acres)	Daily Excavation (CY)	Total Excavation (CY)	Daily Imported Material (CY)
Phase 1 - Clearing and Grubbing											
Bulldozers:	CAT D7H(4HG)	230	9	2	162	18					
Dump Trucks:	GMC C4500	450	9	12	929	103	1.6	14.3	2,200	20,266	NA
Excavators:	CAT 330CLN	247	9	1	81	9					
Phase 2 - Concrete Removal											
Loaders:	CAT 416C(1XR)	79	7	1	63	9					
Dump Trucks:	GMC C4500	450	7	4	252	36	0.27	1.9	146	1,018	NA
Excavators:	CAT 330CLN	247	7	2	63	9					
Phase 3 - Levee Degrade											
Bulldozers:	CAT D7H(4HG)	230	26	1	234	9					
Dump Trucks:	GMC C4500	450	26	12	2,720	105	0.17	4.3	2,200	59,374	NA
Excavators:	CAT 330CLN	247	26	1	234	9					
Phase 4 - Slurry Wall Construction											
Bulldozers:	CAT D7H(4HG)	230	29	1	258	9					
Long Reach Track Hoe:	CASE CX240	167	25	1	225	9					
Loaders:	CAT 416C(1XR)	79	29	1	258	9	NA	NA	1,200	29,260	1,200
Dump Trucks:	GMC C4500	450	29	2	516	18					
Rough Terrain Forklift:	MasterCraft MC-06-2137	86	29	1	258	9					
Phase 5 - Fill Placement											
Bulldozers:	CAT D7H(4HG)	230	27	4	948	35					
Dump Trucks:	GMC C4500	450	27	14	3,318	123					
Excavators:	CAT 330CLN	247	27	1	237	9	0.17	4.3	NA	NA	2,982
Sheeps Foot Compactors:	CAT 825H	354	27	2	474	18					
Maintainers:	CAT 12M	158	27	2	474	18					
Water Truck:	Peterbilt 340	330	27	1	237	9					
Phase 6 - Concrete Placement											
Concrete Trucks:	GMC C4500	450	24	5	204	9	0.08	1.9	NA	NA	43
Cranes:	Link-Belt HSP-22	136	24	1	204	9					

Total Imported Material (CY)	Workers Per Day
NA	20
NA	12
NA	19
29,260	11
79,600	29
1,018	11

CHP Academy
Sacramento Bypass Levee - Alt #2

	Model (Series) TYP.	HP	Duration (Days)	Fleet Size	Total Operation Hours	Daily Construction Area (Acres)	Total Construction Area (Acres)	Daily Excavation (CY)	Total Excavation (CY)	Daily Imported Material (CY)	Total Imported Material (CY)	Workers Per Day
Phase 1 - Clearing and Grubbing												
Bulldozers:	CAT D7H(4HG)	230	4	2	72							
Dump Trucks:	GMC C4500	450	4	12	407	0.77	3.07	2,200	8,865	NA	NA	20
Excavators:	CAT 330CLN	247	4	1	36							
Phase 2 - Excavate Stability Berm												
Bulldozers:	CAT D7H(4HG)	230	5	2	90							
Dump Trucks:	GMC C4500	450	5	12	507	0.30	1.48	2,200	11,054	NA	NA	20
Excavators:	CAT 330CLN	247	5	1	45							
Phase 3 - Install Stability Berm and Drain System												
Bulldozers:	CAT D7H(4HG)	230	31	2	542							
Dump Trucks:	GMC C4500	450	31	11	2,981							
Excavators:	CAT 330CLN	247	31	1	271	0.05	1.48	NA	NA	2,343	7,065	22
Sheeps Foot Compactors:	CAT 825C	354	31	1	271							
Maintainers:	CAT 12M	158	31	1	271							
Water Truck:	Peterbilt 340	330	31	1	271							
Phase 4 - Install Relief Wells												
Drill Rig:	Schramm T64	350	22	1	198	0.07	1.59	NA	NA	NA	NA	7
Crane:	Link-Belt HSP-22	136	22	1	198							

WSLIP CHP Academy Site Trail Construction (after Levee Improvement)
Construction Data Assumption for Air Quality Analysis

Trail length (ft)	4628	(assume entire length of project site)
Trail width (ft)	16	
Asphalt width (ft)	12	
Asphalt depth (ft)	0.5 - 1.3	

Phase	Phase of Construction	Required Equipment	Duration (Days)	Daily Consrtruction Area (acres)	Total Construction Area (acres)	Daily Excavation (CY)	Total Excavation (CY)	Daily Imported Materials (CY)	Total Imported Materials (CY)
1	Grading	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck	8	0.42	1.70	NA	NA	NA	NA
2	Install Pathways and Signs	1 dump truck, 1 asphalt paver, 1 asphalt sealer, 1 striping truck, 1 small front loader, 1 skid steer loader, 1 small roller	12	0.21	1.27	NA	NA	154	1,851
		Total Days	20						

Truck and Worker On-road Trips

Phase	Phase of Construction	Workers per Day	Duration (Days)	Deliveries per Day Exporting Excavated Materials	Total Deliveries Exporting Excavated Materials	Deliveries per Day Importing Materials	Total Deliveries Importing Materials
1	Grading	10	8	NA	NA	NA	NA
2	Install Pathways and Signs	10	12	NA	NA	8	93

Rivers - Alternative 1

	Model (Series) TYP.		HP	Daily Construction Area (AC)	Total Construction Area (AC)	Daily Excavation (CY)	Total Excavation (CY)	Daily Imported Materials (CY)	Total Imported Materials (CY)	Workers Per Day	Duration (Days)	Fleet Size	Daily Operation Hours	Total Operation Hours
Phase 1 - Roadway Demolition														
Dump Truck:	GMC	C4500	450	0.3	0.6	N/A	N/A	N/A	N/A	15	2	6	39	78
Loaders:	CAT	416C(1XR)	79								2	1	7	13
Bulldozers:	CAT	D7H(4HG)	230								2	2	5	10
Excavator:	CAT	330CLN	247								1	1	4	4
Phase 2 - Clearing and Grubbing														
Bulldozers:	CAT	D7H(4HG)	230	1.2	6.9	1,867	11,200	N/A	N/A	26	6	2	15	92
Dump Trucks:	GMC	C4500	450								6	18	138	825
Excavators:	CAT	330CLN	247								6	1	8	46
Phase 3 - Levee Degrade														
Bulldozers:	CAT	D7H(4HG)	230	0.2	6.0	2,152	58,100	N/A	N/A	25	27	1	9	238
Dump Trucks:	GMC	C4500	450								27	18	158	4,279
Excavators:	CAT	330CLN	247								27	1	9	238
Phase 4 - Slope Flattening														
Bulldozers:	CAT	D7H(4HG)	230	1.0	6.9	N/A	N/A	1,600	11,200	26	7	2	16	112
Dump Trucks:	GMC	C4500	450								7	14	112	784
Excavators:	CAT	330CLN	247								7	2	16	112
Compactors:	CAT	825H	354								7	1	8	56
Maintainers:	CAT	12M	158								7	1	8	56
Water Truck:	Peterbilt	340	330								7	1	8	56
Phase 5A - Slurry Wall Construction														
Delivery Truck:	International	7600	380	N/A	N/A	587	12,333	N/A	N/A	20	1	9	18	18
Bulldozers:	CAT	D7H(4HG)	230								21	2	18	378
Long Reach Track Hoe:	CASE	CX240	167								21	1	9	189
Loaders:	CAT	416C(1XR)	79								21	1	9	189
Dump Trucks:	GMC	C4500	450								21	1	9	189
Rough Terrain Forklift:	MasterCraft	MC-06-2137	86								21	1	9	189
Phase 5B - DSM Wall Construction														
Delivery Truck:	International	7600	380	N/A	N/A	N/A	N/A	N/A	N/A	17	1	9	36	36
Crane w/ Augers:	Bauer	BG 15 H	165								44	1	9	394
Loader:	CAT	416C(1XR)	79								44	1	9	394
Rough Terrain Forklift:	MasterCraft	MC-06-2137	86								44	1	9	394
Phase 6- Fill Placement														
Bulldozers:	CAT	D7H(4HG)	230	0.2	6.9	N/A	N/A	2,968	92,000	36	31	4	36	1,104
Dump Trucks:	GMC	C4500	450								31	22	196	6,072
Excavators:	CAT	330CLN	247								31	1	9	276
Compactors:	CAT	825H	354								31	2	18	552
Maintainers:	CAT	12M	158								31	1	9	276
Water Truck:	Peterbilt	340	330								31	1	9	276
Phase 7 - Roadway														
Dump Trucks:	GMC	C4500	450	0.3	0.6	N/A	N/A	N/A	N/A	21	1	8	37	37
Skip Loader:	CAT	414E	74								2	1	6	11
Water Truck:	Peterbilt	340	330								1	1	8	8
Blade:	CAT	12M	158								2	1	9	17
Sheepsfoot Compactor:	CAT	825H	354								1	1	9	9
Distributor:	Peterbilt	340	330								1	1	1	1
Asphalt Paver:	CAT	AP655D	174								1	1	2	2
Pneumatic Compactor:	CAT	PF-150	96								1	1	2	2
Roller Compactor:	CAT	CS533E	125								2	1	5	10
Totals:											**120**			**18,022**

Alternaitve 1 - Emission Hours by Vehicle

		Auger Drill BG 15 H	Delivery Truck 7600	LR Track Hoe CX240	Excavator 330CLN	Loader 416C(1XR)	Compactor 825H	Bulldozer D7H(4HG)	Dump Truck C4500	Forklift MC-06-2137	Water Truck 340	Skip Loader 414E	Blade 12M	Roller Compactor CS533E	Pneumatic Comp PF-150	Asphalt Paver AP655D	**Totals**
Phase 1 - Roadway Demolition																	
GMC	C4500	0	0	0	0	0	0	0	78	0	0	0	0	0	0	0	**78**
CAT	416C(1XR)	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	**13**
CAT	D7H(4HG)	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	**10**
CAT	330CLN	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	**4**
Phase 2 - Clearing and Grubbing																	
CAT	D7H(4HG)	0	0	0	0	0	0	92	0	0	0	0	0	0	0	0	**92**
GMC	C4500	0	0	0	0	0	0	0	825	0	0	0	0	0	0	0	**825**
CAT	330CLN	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	**46**
Phase 3 - Levee Degrade																	
CAT	D7H(4HG)	0	0	0	0	0	0	238	0	0	0	0	0	0	0	0	**238**
GMC	C4500	0	0	0	0	0	0	0	4,279	0	0	0	0	0	0	0	**4,279**
CAT	330CLN	0	0	0	238	0	0	0	0	0	0	0	0	0	0	0	**238**
Phase 4 - Slope Flattening																	
CAT	D7H(4HG)	0	0	0	0	0	0	112	0	0	0	0	0	0	0	0	**112**
GMC	C4500	0	0	0	0	0	0	0	784	0	0	0	0	0	0	0	**784**
CAT	330CLN	0	0	0	112	0	0	0	0	0	0	0	0	0	0	0	**112**
CAT	825H	0	0	0	0	0	56	0	0	0	0	0	0	0	0	0	**56**
CAT	12M	0	0	0	0	0	0	0	0	0	0	0	56	0	0	0	**56**
Peterbilt	340	0	0	0	0	0	0	0	0	0	56	0	0	0	0	0	**56**
Phase 5A - Slurry Wall Construction																	
International	7600	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	**18**
CAT	D7H(4HG)	0	0	0	0	0	0	378	0	0	0	0	0	0	0	0	**378**
CASE	CX240	0	0	189	0	0	0	0	0	0	0	0	0	0	0	0	**189**
CAT	416C(1XR)	0	0	0	0	189	0	0	0	0	0	0	0	0	0	0	**189**
GMC	C4500	0	0	0	0	0	0	0	189	0	0	0	0	0	0	0	**189**
MasterCraft	MC-06-2137	0	0	0	0	0	0	0	0	189	0	0	0	0	0	0	**189**
Phase 5B - DSM Wall Construction																	
International	7600	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	**36**
Bauer	BG 15 H	394	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**394**
CAT	416C(1XR)	0	0	0	0	394	0	0	0	0	0	0	0	0	0	0	**394**
MasterCraft	MC-06-2137	0	0	0	0	0	0	0	0	394	0	0	0	0	0	0	**394**
Phase 6- Fill Placement																	
CAT	D7H(4HG)	0	0	0	0	0	0	1,104	0	0	0	0	0	0	0	0	**1,104**
GMC	C4500	0	0	0	0	0	0	0	6,072	0	0	0	0	0	0	0	**6,072**
CAT	330CLN	0	0	0	276	0	0	0	0	0	0	0	0	0	0	0	**276**
CAT	825H	0	0	0	0	0	552	0	0	0	0	0	0	0	0	0	**552**
CAT	12M	0	0	0	0	0	0	0	0	0	0	0	276	0	0	0	**276**
Peterbilt	340	0	0	0	0	0	0	0	0	0	276	0	0	0	0	0	**276**
Phase 7 - Roadway																	
GMC	C4500	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	**37**
CAT	414E	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	**11**
Peterbilt	340	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	**8**
CAT	12M	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	**17**
CAT	825H	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	**9**
Peterbilt	340	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
CAT	AP655D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	**2**
CAT	PF-150	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	**2**
CAT	CS533E	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	**10**
Totals:		**394**	**54**	**189**	**676**	**596**	**617**	**1,934**	**12,264**	**583**	**341**	**11**	**349**	**10**	**2**	**2**	**18,022**

Rivers - Alternative 2

	Model (Series) TYP.		HP	Daily Construction Area (AC)	Total Construction Area (AC)	Daily Excavation (CY)	Total Excavation (CY)	Daily Imported Materials (CY)	Total Imported Materials (CY)	Workers Per Day	Duration (Days)	Fleet Size	Daily Operation Hours	Total Operation Hours
Phase 1 - Roadway Demolition														
Dump Truck:	GMC	C4500	450	0.3	0.6	N/A	N/A	N/A	N/A	15	2	6	39	78
Loaders:	CAT	416C(1XR)	79								2	1	7	13
Bulldozers:	CAT	D7H(4HG)	230								2	2	5	10
Excavator:	CAT	330CLN	247								1	1	4	4
Phase 2 - Clearing and Grubbing														
Bulldozers:	CAT	D7H(4HG)	230	1.2	6.9	1,867	11,200	N/A	N/A	26	6	2	15	92
Dump Trucks:	GMC	C4500	450								6	18	138	825
Excavators:	CAT	330CLN	247								6	1	8	46
Phase 3- Slope Flattening														
Bulldozers:	CAT	D7H(4HG)	230	0.3	6.9	N/A	N/A	2,378	54,700	30	23	2	18	403
Dump Trucks:	GMC	C4500	450								23	18	158	3,623
Excavators:	CAT	330CLN	247								23	2	4	101
Compactors:	CAT	824C(4SN)	315								23	1	9	202
Maintainers:	FORD	F650	300								23	1	9	202
Water Truck:	Peterbilt	340	330								23	1	9	202
Phase 4 - Sheet Pile Wall														
Long Bed Truck:	GMC	C4500	450	N/A	N/A	N/A	N/A	N/A	N/A	9	1	1	9	9
Crane:	Link Belt	HC-208	136								130	2	18	2,325
Impact Hammer:	PileCo.	D19-42	?								130	1	9	1,163
Phase 5 - Roadway														
Dump Trucks:	GMC	C4500	450	0.3	0.6	N/A	N/A	N/A	N/A	21	1	8	37	37
Skip Loader:	CAT	414E	74								2	1	6	11
Water Truck:	Peterbilt	340	330								1	1	8	8
Blade:	CAT	12M	158								2	1	9	17
Sheepsfoot Compactor:	CAT	825H	354								1	1	9	9
Distributor:	Peterbilt	340	330								1	1	1	1
Asphalt Paver:	CAT	AP655D	174								1	1	2	2
Pneumatic Compactor:	CAT	PF-150	96								1	1	2	2
Roller Compactor:	CAT	CS533E	125								2	1	5	10
Totals:											**164**			**9,395**

Alternaitve 2 - Emission Hours by Vehicle

		Excavator 330CLN	Loader 416C(1XR)	Compactor 824C(4SN)	Bulldozer D7H(4HG)	Maintainer F650	Dump Truck C4500	Water Truck 340	Skip Loader 414E	Blade 12M	Roller Compactor CS533E	Asphalt Paver AP655D	Impact Hammer D19-42	Sheepsfoot Comp. 825H	Crane HC-208	Forklift MC-06-2137	CAT PF-150	**Totals**
Phase 1 - Roadway Demolition																		
GMC	C4500	0	0	0	0	0	78	0	0	0	0	0	0	0	0	0	0	**78**
CAT	416C(1XR)	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**13**
CAT	12M	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	**10**
CAT	330CLN	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
Phase 2 - Clearing and Grubbing																		
CAT	D7H(4HG)	0	0	0	92	0	0	0	0	0	0	0	0	0	0	0	0	**92**
GMC	C4500	0	0	0	0	0	825	0	0	0	0	0	0	0	0	0	0	**825**
CAT	330CLN	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**46**
Phase 3 - Slope Flattening																		
CAT	D7H(4HG)	0	0	0	403	0	0	0	0	0	0	0	0	0	0	0	0	**403**
GMC	C4500	0	0	0	0	0	3,623	0	0	0	0	0	0	0	0	0	0	**3,623**
CAT	330CLN	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**101**
CAT	824C(4SN)	0	0	202	0	0	0	0	0	0	0	0	0	0	0	0	0	**202**
FORD	F650	0	0	0	0	202	0	0	0	0	0	0	0	0	0	0	0	**202**
Peterbilt	340	0	0	0	0	0	0	202	0	0	0	0	0	0	0	0	0	**202**
Phase 4 - Sheet Pile Wall																		
GMC	C4500	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	**9**
Link Belt	HC-208	0	0	0	0	0	0	0	0	0	0	0	0	0	2,325	0	0	**2,325**
PileCo.	D19-42	0	0	0	0	0	0	0	0	0	0	0	1,163	0	0	0	0	**1,163**
Phase 5 - Roadway																		
GMC	C4500	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	**37**
CAT	414E	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	**11**
Peterbilt	340	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	**8**
CAT	12M	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	**17**
CAT	825H	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	**9**
Peterbilt	340	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**
CAT	AP655D	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	**2**
CAT	PF-150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	**2**
CAT	CS533E	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	**10**
	Totals	**151**	**13**	**202**	**505**	**202**	**4,572**	**211**	**11**	**17**	**10**	**2**	**1,163**	**9**	**2,325**	**0**	**2**	**9,395**

WSLIP Rivers Site Trail Construction (after Levee Improvement)
Construction Data Assumption for Air Quality Analysis

Trail length (ft)	4300	(assume entire length of project site)
Trail width (ft)	16	8
Asphalt width (ft)	12	4
Asphalt depth (ft)	0.5 - 1.3	

Phase	Phase of Construction	Required Equipment	Duration (Days)	Daily Consrtruction Area (acres)	Total Construction Area (acres)	Daily Excavation (CY)	Total Excavation (CY)	Daily Imported Materials (CY)	Total Imported Materials (CY)
1	Clearing and Pruning	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck	5	0.47	1.18	NA	NA	NA	NA
2	Grading	1 scraper, 1 wheel loader, 1 motor grader, 1 dump truck, 1 steel wheel loader, 1 water truck	8	0.59	2.37	NA	NA	NA	NA
3	Install Pathways and Signs	1 dump truck, 1 asphalt paver, 1 asphalt sealer, 1 striping truck, 1 small front loader, skid steer loader, 1 small roller	12	0.26	1.58	NA	NA	191	2,293
		Total Days	25						

Truck and Worker On-road Trips

Phase	Phase of Construction	Workers per Day	Duration (Days)	Deliveries per Day Exporting Excavated Materials	Total Deliveries Exporting Excavated Materials	Deliveries per Day Importing Materials	Total Deliveries Importing Materials
1	Clearing and Pruning	5	5	NA	NA	NA	NA
2	Grading	10	8	NA	NA	NA	NA
3	Install Pathways and Signs	10	12	NA	NA	10	115

Appendix F

Plant Lists

Appendix F.A
Plant Species Observed During Reconnaissance-Level Field Visits to Program Area

Scientific Name	Common Name	CDFA Rating	Cal-IPC Rating
Acer negundo var. *californicum*	box elder		
Ailanthus altissima	tree-of-heaven	C	Moderate
Aira caryophyllea	silver hairgrass		
Alnus rhombifolia	white alder		
Anagallis arvensis	scarlet pimpernel		
Anthemis cotula	mayweed		
Artemisia douglasiana	mugwort		
Arundo donax	giant reed	B	High
Avena barbata	slender wild oat		Moderate
Avena fatua	wild oat		Moderate
Baccharis pilularis	coyote brush		
Brassica nigra	black mustard		Moderate
Bromus carinatus	California brome		
Bromus diandrus	ripgut brome		Moderate
Bromus hordeaceus	soft chess		Limited
Bromus madritensis ssp. *rubens*	red brome		High
Camissonia sp.	suncups		
Capsella bursa-pastoris	shepherd's purse		
Carduus pycnocephalus	Italian thistle	C	Moderate
Carex barbarae.	valley sedge		
Carex sp.	sedge		
Catalpa sp.	catalpa		
Centaurea solstitialis	yellow star-thistle	C	High
Centromadia pungens	common tarweed		
Chamomilla suaveolens	pineapple weed		
Cichorium intybus	chicory		
Cirsium vulgare	bull thistle	C	Moderate
Conium maculatum	poison hemlock		Moderate
Convolvulus arvensis	bindweed	C	
Conyza canadensis	horseweed		
Croton setigerus	turkey mullein		
Cynodon dactylon	Bermuda grass	C	Moderate
Cyperus eragrostis	tall flatsedge		
Echinochloa crus-galli	barnyard grass		
Epilobium brachycarpum	panicled willow-herb		
Equisetum sp.	horsetail		
Erodium botrys	big heronbill		
Erodium cicutarium	redstem filaree		Limited
Erodium moschatum	whitestem filaree		
Eucalyptus sp.	eucalyptus		

Scientific Name	Common Name	CDFA Rating	Cal-IPC Rating
Ficus carica	edible fig		Moderate
Filago gallica	filago		
Foeniculum vulgare	sweet fennel		High
Fraxinus latifolia	Oregon ash		
Galium aparine	bedstraw		
Gastridium nitidum	nitgrass		
Geranium dissectum	cutleaf geranium		Limited
Geranium molle	dovefoot geranium		
Gnaphalium luteo-album	cudweed		
Hedera helix	English ivy		High
Helianthus annuus	sunflower		
Hirschfeldia incana	Mediterranean mustard		Moderate
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley		Moderate
Hordeum murinum ssp. *leporinum*	foxtail barley		Moderate
Juglans sp.	black walnut		
Juglans regia	English walnut		
Juncus sp.	rush		
Lactuca serriola	prickly lettuce		
Lagerstroemia indica	crapemyrtle		
Lathyrus tangitanus	Tangier pea		
Lepidium latifolium	perennial pepperweed	B	High
Leymus triticoides	valley wild rye		
Ligustrum sp.	privet		
Liquidamber styraciflua	liquid amber		
Lolium multiflorum	Italian ryegrass		Moderate
Lotus corniculatus	birdfoot trefoil		
Ludwigia sp.	water primrose		High
Lupinus bicolor	miniature lupine		
Lythrum hyssopifolium	hyssop loosestrife		Limited
Malva neglecta	common cheeseweed		
Malva parviflora	cheeseweed		
Medicago polymorpha	bur clover		Limited
Melilotus sp.	sweetclover		
Morus alba	mulberry		
Nerium oleander	oleander		
Nicotiana glauca	tree-tobacco		Moderate
Paspalum dilatatum	dallisgrass		
Paspalum distichum	knot grass		
Phalaris sp.	canary grass		
Phoenix canariensis	Canary Island date palm		
Phoradendron macrophyllum	big-leaf mistletoe		
Phyla nodiflora	lippia		
Picris echioides	bristly ox-tongue		Limited
Plantago major	common plantain		
Platanus racemosa	western sycamore		

Scientific Name	Common Name	CDFA Rating	Cal-IPC Rating
Platanus sp.	plane tree		
Poa annua	annual bluegrass		
Polygonum arenastrum	common knotweed		
Polygonum sp.	knotweed		
Populus fremontii ssp. *fremontii*	Fremont cottonwood		
Quercus agrifolia	coast live oak		
Quercus douglasii	blue oak		
Quercus lobata	valley oak		
Quercus suber	cork oak		
Quercus wislizeni	interior live oak		
Raphanus raphanistrum	jointed charlock		
Raphanus sativus	wild radish		Limited
Robinia psuedoacacia	black locust		
Rosa californica	California wild rose		
Rubus discolor	Himalayan blackberry		High
Rubus ursinus	California blackberry		
Rumex crispus	curly dock		
Salix exigua	sandbar willow		
Salix gooddingii	Goodding's black willow		
Salix lasiolepis	arroyo willow		
Salsola tragus	Russian thistle		Limited
Sambucus mexicana	blue elderberry		
Scirpus sp.	bulrush		
Senecio vulgaris	old-man-of-spring		
Sequoia sempervirens	coast redwood		
Schinus sp.	pepper tree		Limited
Scirpus acutus	tule		
Silybum marianum	milk-thistle		Limited
Sonchus asper	prickly sow thistle		
Sonchus oleraceus	common sow thistle		
Sorghum halepense	Johnsongrass		
Torilis arvensis	hedge-parsley		Moderate
Toxicodendron diversilobum	poison oak		
Tragopogon sp.	salsify		
Trifolium hirtum	rose clover		Moderate
Typha sp.	cattail		Moderate
Ulmus parvifolia	Chinese elm		
Verbena bonariensis	purpletop vervain		
Vicia villosa ssp. *varia.*	winter vetch		
Vitis californica	California wild grape		
Vulpia myuros var. *myuros*	rattail fescue		Moderate
Xanthium strumarium	rough cocklebur		

Appendix F.B
Plant Species Observed During Site Visits to the Study Areas for the CHP Academy and The Rivers Early Implementation Projects

Scientific Name	Common Name	CHP Academy	The Rivers	CDFA Rating	Cal-IPC Rating
Acer negundo var. *californicum*	box elder	x	x		
Aira caryophyllea	silver hairgrass	x			
Anagallis arvensis	scarlet pimpernel		x		
Anthemis cotula	mayweed	x			
Artemisia douglasiana	mugwort	x	x		
Avena barbata	slender wild oat	x			Moderate
Avena fatua	wild oat		x		Moderate
Baccharis pilularis	coyote brush		x		
Brassica nigra	black mustard	x	x		Moderate
Bromus carinatus	California brome		x		
Bromus diandrus	ripgut brome	x	x		Moderate
Bromus hordeaceus	soft chess	x	x		Limited
Bromus madritensis ssp. *rubens*	red brome	x			High
Camissonia sp.	suncups		x		
Capsella bursa-pastoris	shepherd's purse		x		
Carduus pycnocephalus	Italian thistle		x	C	Moderate
Carex barbarae.	valley sedge	x	x		
Catalpa sp.	catalpa	x			
Centaurea solstitialis	yellow star-thistle	x		C	High
Centromadia pungens	common tarweed	x			
Chamomilla suaveolens	pineapple weed	x	x		
Conium maculatum	poison hemlock	x			Moderate
Convolvulus arvensis	bindweed	x	x	C	
Conyza canadensis	horseweed		x		
Croton setigerus	turkey mullein		x		
Cynodon dactylon	Bermuda grass	x	x	C	Moderate
Cyperus eragrostis	tall flatsedge	x	x		
Echinochloa crus-galli	barnyard grass	x	x		
Epilobium brachycarpum	panicled willow-herb	x	x		
Equisetum sp.	horsetail	x			
Erodium botrys	big heronbill	x	x		
Erodium cicutarium	redstem filaree	x	x		Limited
Erodium moschatum	whitestem filaree	x	x		
Filago gallica	filago		x		
Fraxinus latifolia	Oregon ash	x	x		
Galium aparine	bedstraw		x		

Scientific Name	Common Name	CHP Academy	The Rivers	CDFA Rating	Cal-IPC Rating
Gastridium nitidum	nitgrass	x			
Geranium dissectum	cutleaf geranium	x	x		Limited
Geranium molle	dovefoot geranium		x		
Gnaphalium luteo-album	cudweed	x	x		
Helianthus annuus	sunflower	x			
Hirschfeldia incana	Mediterranean mustard	x	x		Moderate
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	x	x		Moderate
Hordeum murinum ssp. *leporinum*	foxtail barley		x		Moderate
Lactuca serriola	prickly lettuce	x	x		
Lathyrus tangitanus	Tangier pea		x		
Lepidium latifolium	perennial pepperweed	x		B	High
Leymus triticoides	valley wild rye		x		
Ligustrum sp.	privet		x		
Lolium multiflorum	Italian ryegrass	x	x		Moderate
Lotus corniculatus	birdfoot trefoil	x			
Ludwigia sp.	water primrose	x			High
Lupinus bicolor	miniature lupine		x		
Lythrum hyssopifolium	hyssop loosestrife	x			Limited
Malva parviflora	cheeseweed		x		
Medicago polymorpha	bur clover		x		Limited
Melilotus sp.	sweetclover		x		
Morus alba	mulberry		x		
Nicotiana glauca	tree-tobacco	x			Moderate
Paspalum distichum	knot grass	x			
Phalaris sp.	canary grass	x			
Phoradendron macrophyllum	big-leaf mistletoe	x	x		
Phyla nodiflora	lippia	x			
Picris echioides	bristly ox-tongue	x			Limited
Plagiobothrys canescens	valley popcornflower	x			
Plantago major	common plantain	x			
Platanus sp.	plane tree		x		
Poa annua	annual bluegrass		x		
Polygonum sp.	knotweed	x			
Populus fremontii ssp. *fremontii*	Fremont cottonwood	x	x		
Quercus agrifolia	coast live oak	x			
Quercus douglasii	blue oak		x		
Quercus lobata	valley oak	x	x		
Quercus suber	cork oak		x		
Quercus wislizeni	interior live oak	x	x		
Raphanus raphanistrum	jointed charlock	x	x		
Raphanus sativus	wild radish	x	x		Limited
Robinia psuedoacacia	black locust		x		

Scientific Name	Common Name	CHP Academy	The Rivers	CDFA Rating	Cal-IPC Rating
Rosa californica	California wild rose	x			
Rubus discolor	Himalayan blackberry	x	x		High
Rubus ursinus	California blackberry	x			
Rumex crispus	curly dock	x	x		
Salix exigua	sandbar willow	x			
Salix gooddingii	Goodding's black willow	x	x		
Sambucus mexicana	blue elderberry				
Senecio vulgaris	old-man-of-spring	x	x		
Sequoia sempervirens	coast redwood	x			
Schinus sp.	pepper tree		x		Limited
Scirpus acutus	tule	x			
Silybum marianum	milk-thistle	x	x		Limited
Sonchus asper	prickly sow thistle	x			
Sonchus oleraceus	common sow thistle	x	x		
Torilis arvensis	hedge-parsley		x		Moderate
Toxicodendron diversilobum	poison oak	x	x		
Tragopogon sp.	salsify		x		
Trifolium hirtum	rose clover	x	x		Moderate
Typha latifolia	broadleaf cattail	x			
Ulmus parvifolia	Chinese elm		x		
Verbena bonariensis	purpletop vervain		x		
Vicia villosa ssp. *varia.*	winter vetch	x	x		
Vitis californica	California wild grape	x	x		
Vulpia myuros var. *myuros*	rattail fescue	x	x		Moderate
Xanthium strumarium	rough cocklebur	x			

Appendix G

U.S. Fish and Wildlife Service List of Endangered, Threatened, and Proposed Species for the Study Area—February 4, 2008

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 080204015402

Database Last Updated: January 31, 2008

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Quads Containing Listed, Proposed or Candidate Species:

SACRAMENTO WEST (513D)

County Lists

Yolo County

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana aurora draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Strix occidentalis caurina
northern spotted owl (T)

Plants

Cordylanthus palmatus
palmate-bracted bird's-beak (E)

Neostapfia colusana
Colusa grass (T)
Critical habitat, Colusa grass (X)

Tuctoria mucronata
Critical habitat, Solano grass (=Crampton's tuctoria) (X)
Solano grass (=Crampton's tuctoria) (E)

Candidate Species

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys incluc any proposed and candidate species on your list.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepa for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally liste wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, tra capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of twc procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that n result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together t avoid or minimize the impact on listed species and their habitat. Such consultation would resu in a biological opinion by the Service addressing the anticipated effect of the project on listed proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and a likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct a indirect impacts to listed species and compensates for project-related loss of habitat. You shou include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, wat air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are n restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal

Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See o critical habitat page for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end o your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essent information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need tc obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be May 04, 2008.

California Department of Fish and Game
Natural Diversity Database
Sacramento West + 8 surrounding quads

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	Accipiter cooperii Cooper's hawk	ABNKC12040			G5	S3	SC
2	Actinemys marmorata western pond turtle	ARAAD02030			G3G4	S3	SC
3	Actinemys marmorata marmorata northwestern pond turtle	ARAAD02031			G3G4T3	S3	SC
4	Agelaius tricolor tricolored blackbird	ABPBXB0020			G2G3	S2	SC
5	Ammodramus savannarum grasshopper sparrow	ABPBXA0020			G5	S2	
6	Antrozous pallidus pallid bat	AMACC10010			G5	S3	SC
7	Archoplites interruptus Sacramento perch	AFCQB07010			G3	S1	SC
8	Ardea alba great egret	ABNGA04040			G5	S4	
9	Ardea herodias great blue heron	ABNGA04010			G5	S4	
10	Athene cunicularia burrowing owl	ABNSB10010			G4	S2	SC
11	Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered		G1	S1	
12	Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
13	Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150			G2	S2	
14	Buteo swainsoni Swainson's hawk	ABNKC19070		Threatened	G5	S2	
15	Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened		G4T3	S2	SC
16	Charadrius montanus mountain plover	ABNNB03100			G2	S2?	SC
17	Cicindela hirticollis abrupta Sacramento Valley tiger beetle	IICOL02106			G5TH	SH	
18	Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Candidate	Endangered	G5T3Q	S1	
19	Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2	
20	Egretta thula snowy egret	ABNGA06030			G5	S4	
21	Elanus leucurus white-tailed kite	ABNKC06010			G5	S3	
22	Lasionycteris noctivagans silver-haired bat	AMACC02010			G5	S3S4	SC
23	Lasiurus cinereus hoary bat	AMACC05030			G5	S4?	SC

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3	
25	Linderiella occidentalis California linderiella	ICBRA06010			G3	S2S3	
26	Myrmosula pacifica Antioch multilid wasp	IIHYM15010			GH	SH	
27	Nycticorax nycticorax black-crowned night heron	ABNGA11010			G5	S3	
28	Phalacrocorax auritus double-crested cormorant	ABNFD01020			G5	S3	SC
29	Plegadis chihi white-faced ibis	ABNGE02020			G5	S1	SC
30	Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020			G2	S2	SC
31	Progne subis purple martin	ABPAU01010			G5	S3	SC
32	Riparia riparia bank swallow	ABPAU08010		Threatened	G5	S2S3	
33	Taxidea taxus American badger	AMAJF04010			G5	S4	SC
34	Thamnophis gigas giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3	
35	Xanthocephalus xanthocephalus yellow-headed blackbird	ABPBXB3010			G5	S3S4	

Appendix H

Public Health and Hazards: EDR Data Map Environmental Atlas

EDR DataMap®
Environmental Atlas

West Sacramento EIP
Yolo, CA

October 18, 2007

Inquiry number 02053780.1r

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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FOCUS MAP SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	1
NPL LIENS	0
CERCLIS	2
CERC-NFRAP	2
CORRACTS	1
RCRA TSD	1
RCRA Lg. Quan. Gen.	2
RCRA Sm. Quan. Gen.	5
ERNS	1
HMIRS	0
US ENG CONTROLS	1
US INST CONTROL	0
DOD	0
FUDS	2
US BROWNFIELDS	5
CONSENT	1
ROD	1
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	10
RAATS	1
STATE AND LOCAL RECORDS	
Hist Cal-Sites	9
CA Bond Exp. Plan	6
SCH	1
Toxic Pits	0
State Landfill	0
CA WDS	1
WMUDS/SWAT	2

FOCUS MAP SUMMARY

Database	Total Plotted
Cortese	15
SWRCY	0
LUST	16
CA FID UST	2
SLIC	10
UST	14
HIST UST	8
AST	1
LIENS	0
SWEEPS UST	3
CHMIRS	3
Notify 65	1
DEED	8
VCP	3
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	9
HAZNET	17
EMI	6
HAULERS	0
ENVIROSTOR	28
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	4

NOTES:

Sites may be listed in more than one database

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

SACRAMENTO, CA 95605

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL RECORDS

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
NPL LIENS	Federal Superfund Liens
HMIRS	Hazardous Materials Information Reporting System
US INST CONTROL	Sites with Institutional Controls
DOD	Department of Defense Sites
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
DOT OPS	Incident and Accident Data
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ICIS	Integrated Compliance Information System
LUCIS	Land Use Control Information System
US CDL	Clandestine Drug Labs
RADINFO	Radiation Information Database
LIENS 2	CERCLA Lien Information
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File

STATE AND LOCAL RECORDS

Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
SWRCY	Recycler Database
LIENS	Environmental Liens Listing
CLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
CDL	Clandestine Drug Labs
HAULERS	Registered Waste Tire Haulers Listing

EXECUTIVE SUMMARY

TRIBAL RECORDS

INDIAN RESERV ---------- Indian Reservations
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land
INDIAN UST ---------- Underground Storage Tanks on Indian Land

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

The Map ID column refers to the Map ID-Focus Map(s) of the listed site.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL RECORDS

Delisted NPL: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may deleted from the NPL where no further response is appropriate.

A review of the Delisted NPL list, as provided by EDR, and dated 08/27/2007 has revealed that there is 1 Delisted NPL site within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 04/23/2007 has revealed that there are 2 CERCLIS sites within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***
VAN WATERS & ROGERS, INC	850 SOUTH RIVER ROAD	60-13

EXECUTIVE SUMMARY

CERCLIS-NFRAP: Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

A review of the CERC-NFRAP list, as provided by EDR, and dated 06/21/2007 has revealed that there are 2 CERC-NFRAP sites within the searched area.

Site	Address	Map ID
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***
C&S BATTERY & LEAD CO	860 RISKE LN	59-13

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 06/26/2007 has revealed that there is 1 CORRACTS site within the searched area.

Site	Address	Map ID
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 06/13/2006 has revealed that there is 1 RCRA-TSDF site within the searched area.

Site	Address	Map ID
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***

EXECUTIVE SUMMARY

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 06/13/2006 has revealed that there are 2 RCRA-LQG sites within the searched area.

Site	Address	Map ID
IDEXX VETERINARY SVC	***2825 KOVR DRIVE***	***21-8***
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 06/13/2006 has revealed that there are 5 RCRA-SQG sites within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***
STOCKTON PLAT. INC DBA CAPITOL	***319 3RD ST***	***32-9***
PETROLEUM TANK LINE	***2600 RICE AVE***	***33-8***
FIRST UNION BANK C O JONES LAN	***707 3RD ST***	***41-9,13***
RICE GROWERS ASSOCIATION OF CA	***901 S RIVER RD***	***62-13***

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 12/31/2006 has revealed that there is 1 ERNS site within the searched area.

Site	Address	Map ID
I-80 & HARBOR BLVD	I-80 & HARBOR BLVD	14-8

ENG CONTROLS: A listing of sites with engineering controls in place.

A review of the US ENG CONTROLS list, as provided by EDR, and dated 07/16/2007 has revealed that there is 1 US ENG CONTROLS site within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***

FUDS: The Listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

A review of the FUDS list, as provided by EDR, and dated 12/31/2006 has revealed that there are 2 FUDS sites within the searched area.

Site	Address	Map ID
SACRAMENTO DISTRICT ENGINEER Y		9-7
SACRAMENTO ENGINEERING DEPOT		61-13

US BROWNFIELDS: The EPA's listing of Brownfields properites addressed by Cooperative Agreement Recipients and Brownfields properties addressed by Targeted Brownfields Assessments

A review of the US BROWNFIELDS list, as provided by EDR, and dated 06/20/2007 has revealed that there are 5 US BROWNFIELDS sites within the searched area.

Site	Address	Map ID
422 - 424 C STREET	422 - 424 C STREET	28-9
WASHINGTON FIREHOUSE	317 3RD STREET	32-9
THE EXPERIENCE MOTEL	824 WEST CAPITOL AVENUE	42-13
820 WEST CAPITOL AVENUE	820 WEST CAPITOL AVENUE	42-13
FORMER TOWER COURT PROPERTIES	706 TOWER COURT	46-13

CONSENT: Major Legal settlements that establish responsibility and standards for cleanup at NPL (superfund) sites. Released periodically by U.S. District Courts after settlement by parties to litigation matters.

A review of the CONSENT list, as provided by EDR, and dated 04/13/2007 has revealed that there is 1 CONSENT site within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***

EXECUTIVE SUMMARY

RODS: Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

A review of the ROD list, as provided by EDR, and dated 06/08/2007 has revealed that there is 1 ROD site within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/19/2007 has revealed that there are 10 FINDS sites within the searched area.

Site	Address	Map ID
CITY OF W SACRAMENTO, WTR TRMT	***400 NORTH HARBOR ROAD***	***13-7,8***
FARALLON BOATS	504 HARBOR BOULEVARD	18-8
JIBBOOM JUNKYARD SUPERFUND SIT	***240 JIBBOOM ST***	***19-9***
IDEXX VETERINARY SVC	***2825 KOVR DRIVE***	***21-8***
STOCKTON PLAT. INC DBA CAPITOL	***319 3RD ST***	***32-9***
PETROLEUM TANK LINE	***2600 RICE AVE***	***33-8***
W SACRAMENTO, CITY OF PUMP STN	***201 F STREET***	***38-9***
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***
FIRST UNION BANK C O JONES LAN	***707 3RD ST***	***41-9,13***
RICE GROWERS ASSOCIATION OF CA	***901 S RIVER RD***	***62-13***

RAATS: The RCRA Administration Action Tracking System contains records based on enforcement actions issued under RCRA and pertaining to major violators. It includes administrative and civil actions brought by the United States Environmental Protection Agency. The source of this database is the U.S. EPA.

A review of the RAATS list, as provided by EDR, and dated 04/17/1995 has revealed that there is 1 RAATS site within the searched area.

Site	Address	Map ID
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***

EXECUTIVE SUMMARY

STATE AND LOCAL RECORDS

HIST CAL-SITES: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

A review of the HIST Cal-Sites list, as provided by EDR, and dated 08/08/2005 has revealed that there are 9 HIST Cal-Sites sites within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD	***240-260 JIBBOOM STREET***	***19-9***
UP, DOWNTOWN SAC - LAGOON	***401 I STREET***	***39-9,10,13,14***
SP, SAC - BATTERY SHOP YARD	***401 I STREET***	***39-9,10,13,14***
SP, SAC - SAND PILES	***401 I STREET***	***39-9,10,13,14***
SP, SAC - SACRAMENTO STATION	***401 I STREET***	***39-9,10,13,14***
UP, DOWNTOWN SAC - CENTRAL SHO	***401 I STREET***	***39-9,10,13,14***
SACRAMENTO HOUSING & REDEVELOP	***1920 FRONT STREET***	***63-13***
PG&E - SACRAMENTO SITE	***2000 FRONT STREET***	***64-13***
SMUD, FRONT & T STREETS	***FRONT / T STREETS***	***65-13***

BEP: Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

A review of the CA BOND EXP. PLAN list, as provided by EDR, and dated 01/01/1989 has revealed that there are 6 CA BOND EXP. PLAN sites within the searched area.

Site	Address	Map ID
JIBBOOM JUNKYARD	I-5 AND JIBBOOM STREET	20-9
B.O.R. INDUSTRIES	2505 RICE AVENUE	33-8
SP, SAC.-LOCOMOTIVE WORKS	401 "I" STREET	39-9,10,13,14
SP, SAC. - BATTERY SHOP	401 "I" STREET	39-9,10,13,14
SP, SAC. - PONDS & DITCH	401 "I" STREET	39-9,10,13,14
PG&E FORMER MANUFACTURED GAS P	***2000 FRONT ST***	***64-13***

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 08/28/2007 has revealed that there is 1 SCH site within the searched area.

Site	Address	Map ID
TWO RIVERS ELEMENTARY SCHOOL	***3201 WEST RIVER DRIVE***	***1-3***

EXECUTIVE SUMMARY

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the CA WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there is 1 CA WDS site within the searched area.

Site	Address	Map ID
FREDERICKSEN TANK LINES	***850 DELTA LN***	***50-13***

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there are 2 WMUDS/SWAT sites within the searched area.

Site	Address	Map ID
RIVER POINT BUSINESS PARK	HARBOR BLVD/REED AVE	25-8
UNION PACIFIC RAILROAD-SACRAME	***401 I ST***	***39-9,10,13,14***

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, and dated 04/01/2001 has revealed that there are 15 Cortese sites within the searched area.

Site	Address	Map ID
POST PROPERTY (ABANDENT)	2300 ORCHARD LN	2-3
SACRAMENTO MAINTENANCE YA	***1450 RIVERBANK***	***12-8***
BRYTE SEND STORAGE	***1645 RIVERBANK RD***	***15-8***
COMMUN, CENTER	***111 BERCUT***	***23-9***
FORMER HUDSON	***500 C ST***	***29-9***
GARY'S SERVICE	***427 C ST***	***30-9***
PETROLEUM TANK LINE	***2600 RICE AVE***	***33-8***
ON THE BALL GRAPHICS	***500 5TH ST***	***34-9***
OLD TRAILWAYS PROP	***500 E ST***	***34-9***
UNION PACIFIC RAILROAD-SACRAME	***401 I ST***	***39-9,10,13,14***
RALEY'S LANDING/PARRISH A	490 CAPITOL	43-13
FREDERICKSEN TANK LINES	***850 DELTA LN***	***50-13***
ROADWAY EXPRESS INC	***800 DELTA LN***	***52-13***
VAN WATERS & ROGERS	***850 SOUTH RIVER RD***	***60-13***
PG&E FORMER MANUFACTURED GAS P	***2000 FRONT ST***	***64-13***

EXECUTIVE SUMMARY

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 07/10/2007 has revealed that there are 16 LUST sites within the searched area.

Site	Address	Map ID
POST PROPERTY	***2300 ORCHARD LN***	***2-3***
Facility Status: Case Closed		
SACRAMENTO MAINTENANCE YA	***1450 RIVERBANK***	***12-8***
Facility Status: Pollution Characterization		
BRYTE SEND STORAGE	***1645 RIVERBANK RD***	***15-8***
Facility Status: Case Closed		
COMMUN, CENTER	***111 BERCUT***	***23-9***
Facility Status: Case Closed		
FORMER HUDSON	***500 C ST***	***29-9***
Facility Status: Case Closed		
GARY'S MOWHAWK SERVICE CASE #2	427 C STREET	30-9
Facility Status: Preliminary site assessment underway		
GARY'S SERVICE	***427 C ST***	***30-9***
Facility Status: Case Closed		
PETROLEUM TANK LINE	***2600 RICE AVE***	***33-8***
Facility Status: Pollution Characterization		
ON THE BALL GRAPHICS	***500 5TH ST***	***34-9***
Facility Status: Case Closed		
OLD TRAILWAYS PROP	***500 E ST***	***34-9***
Facility Status: Case Closed		
UNION PACIFIC RAILROAD-SACRAME	***401 I ST***	***39-9,10,13,14***
Facility Status: Case Closed		
RALEY'S LANDING/PARRISH ARCO	490 WEST CAPITOL AVE	43-13
Facility Status: Case Closed		
PDC PROPERTIES	***428 J ST***	***45-13,14***
Facility Status: Case Closed		
FREDERICKSEN TANK LINES	***850 DELTA LN***	***50-13***
Facility Status: Pollution Characterization		
ROADWAY EXPRESS INC	***800 DELTA LN***	***52-13***
Facility Status: Case Closed		
RELLES OIL	801 SOUTH RIVER ROAD	54-13
Facility Status: Preliminary site assessment underway		

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within the searched area.

EXECUTIVE SUMMARY

Site	Address	Map ID
PERRY FARMS	***1831 GARDEN HWY***	***3-3***
FARMING	***2350 GARDEN HWY***	***10-8***

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 08/03/2007 has revealed that there are 10 SLIC sites within the searched area.

Site	Address	Map ID
1X CAL DEPT OF WATER RESOURCES	***240 JIBBOOM ST***	***19-9***
Facility Status: Case Open		
MCI TELECOMMUNICATION CORPORAT	***2820 KOVR DR***	***21-8***
HOME DEPOT	700 RIVERPOINT CIRCLE	24-8
Facility Status: Case Open		
SOUTHERN PACIFIC TRANS CO	***401 I ST***	***39-9,10,13,14***
Facility Status: Case Open		
UNION PACIFIC RAILROAD-SACRAME	***401 I ST***	***39-9,10,13,14***
COAST OIL COMPANY** UP TO 199	801 RIVER RD S	51-13
CAPITOL GATEWAY	301 CAPITOL MALL	57-13
VAN WATERS & ROGERS	***850 SOUTH RIVER RD***	***60-13***
Facility Status: Verification Monitoring Underway		
PG&E FORMER MANUFACTURED GAS P	***2000 FRONT ST***	***64-13***
723 "S" ST SITE (FORMER JUNKYA	***723 S ST***	***67-13,14***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 07/10/2007 has revealed that there are 14 UST sites within the searched area.

Site	Address	Map ID
USACE BRYTE YARD	1645 RIVERBANK RD	15-8
TANDY, GERTRUDE (TRUST)	613 YOLO ST	17-8
VERIZON BUSINESS	2820 KOVR DR	21-8
YOLO CO PUBLIC WORKS/W SAC YD	213 4TH ST	26-9
W SAC LIGHTHOUSE PUMP STATION	310 B ST	27-9
STORM DRAINAGE PUMP STATION	326 5TH STREET	29-9
GARY'S SERVICE	427 C ST	30-9
LEHRER VACANT LOT	317-319 C ST	31-9
CAPITOL PLATING - W SACRAMENTO	319 3RD ST	32-9
RALEY'S LANDING	600 2ND ST	38-9
W SAC PUBLIC WORKS	201 F ST	38-9
VACANT PROPERTY	710-712 3RD ST	41-9,13
RALEY'S FUEL STATION	300 W CAPITOL AVE	47-13
RICE GROWERS ASSOCIATION OF CA	***901 S RIVER RD***	***62-13***

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 8 HIST UST sites within the searched area.

Site	Address	Map ID
PERRY FARMS	1831 GARDEN HWY	3-3
THE VIRGIN STURGEON	***1577 GARDEN HWY***	***6-4***
FARMING	2350 GARDEN HWY	10-8
BRYTE YARD	1645 RIVERBANK RD	15-8
ELMER'S SERVICE	427 C ST	30-9
ELMER'S SERVICE STATION	427 C ST	30-9
CAPITOL PLATING	319 3RD ST	32-9
PETROLEUM TANK LINE	***2600 RICE AVE***	***33-8***

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the AST list, as provided by EDR, and dated 05/01/2007 has revealed that there is 1 AST site within the searched area.

Site	Address	Map ID
WAL-MART SUPERCENTER #3652	755 RIVER POINT DR	22-8

SWEEPS: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 3 SWEEPS UST sites within the searched area.

Site	Address	Map ID
PERRY FARMS	***1831 GARDEN HWY***	***3-3***
SIERRA HEALTH FOUNDATION	***1331 GARDEN HWY***	***8-4***
FARMING	***2350 GARDEN HWY***	***10-8***

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/2005 has revealed that there are 3 CHMIRS sites within the searched area.

Site	Address	Map ID
Not reported	550 2ND ST.	35-9
UP, DOWNTOWN SAC - CENTRAL SHO	***401 I STREET***	***39-9,10,13,14***
ROADWAY EXPRESS INC	***800 DELTA LN***	***52-13***
Date Completed: 19-APR-89		

EXECUTIVE SUMMARY

NOTIFY 65: Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resources Control Board's Proposition 65 database.

A review of the Notify 65 list, as provided by EDR, and dated 10/21/1993 has revealed that there is 1 Notify 65 site within the searched area.

Site	Address	Map ID
ARCO SERVICE STATION NO. 6168	222 JIBBOOM STREET	16-9

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 07/02/2007 has revealed that there are 8 DEED sites within the searched area.

Site	Address	Map ID
1X CAL DEPT OF WATER RESOURCES	***240 JIBBOOM ST***	***19-9***
UP, DOWNTOWN SAC - LAGOON	***401 I STREET***	***39-9,10,13,14***
SP, SAC - BATTERY SHOP YARD	***401 I STREET***	***39-9,10,13,14***
SP, SAC - SACRAMENTO STATION	***401 I STREET***	***39-9,10,13,14***
UP, DOWNTOWN SAC - CENTRAL SHO	***401 I STREET***	***39-9,10,13,14***
SACRAMENTO HOUSING & REDEVELOP	***1920 FRONT STREET***	***63-13***
PG&E - SACRAMENTO SITE	***2000 FRONT STREET***	***64-13***
SMUD, FRONT & T STREETS	***FRONT / T STREETS***	***65-13***

VCP: Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

A review of the VCP list, as provided by EDR, and dated 08/28/2007 has revealed that there are 3 VCP sites within the searched area.

Site	Address	Map ID
1X CAL DEPT OF WATER RESOURCES	***240 JIBBOOM ST***	***19-9***
UP, DOWNTOWN SAC - REDEVELOPME	***401 I STREET***	***39-9,10,13,14***
SACRAMENTO STUCCO CO.	***860 RISKE LANE***	***59-13***

RESPONSE: Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

A review of the RESPONSE list, as provided by EDR, and dated 08/28/2007 has revealed that there are 9 RESPONSE sites within the searched area.

Site	Address	Map ID
CAPITOL PLATING CORPORATION	***319 3RD STREET***	***32-9***
UP, DOWNTOWN SAC - LAGOON	***401 I STREET***	***39-9,10,13,14***
SP, SAC - BATTERY SHOP YARD	***401 I STREET***	***39-9,10,13,14***
SP, SAC - SAND PILES	***401 I STREET***	***39-9,10,13,14***

EXECUTIVE SUMMARY

Site	Address	Map ID
SP, SAC - SACRAMENTO STATION	***401 I STREET***	***39-9,10,13,14***
UP, DOWNTOWN SAC - CENTRAL SHO	***401 I STREET***	***39-9,10,13,14***
UP, DOWNTOWN SAC - MANUFACTURE	***400 I STREET***	***39-9,10,13,14***
PG&E - SACRAMENTO SITE	***2000 FRONT STREET***	***64-13***
SMUD, FRONT & T STREETS	***FRONT / T STREETS***	***65-13***

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2005 has revealed that there are 17 HAZNET sites within the searched area.

Site	Address	Map ID
CALIFORNIA CUSTOM MARINE	***1610 GARDEN HWY***	***5-4***
SACRAMENTO MAINTENANCE YA	***1450 RIVERBANK***	***12-8***
SHIMMICK CONSTRUCTION INC	400 N HARBOR BLVD	13-7,8
US ARMY CORPS OF ENGINEERS	1645 RIVERBANK ROAD	15-8
US ARMY CORP OF ENGINEERS	1645 RIVERBANK RD	15-8
1X CAL DEPT OF WATER RESOURCES	***240 JIBBOOM ST***	***19-9***
IDEXX VETERINARY SVC	***2825 KOVR DRIVE***	***21-8***
MCI TELECOMMUNICATION CORPORAT	***2820 KOVR DR***	***21-8***
PETROLEUM TANK LINE	***2600 RICE AVE***	***33-8***
OLD TRAILWAYS PROP	***500 E ST***	***34-9***
TOM'S HOUSE OF HYDRAULICS INC	***2904 DULUTH ST***	***36-8***
FIRST UNION BANK C O JONES LAN	***707 3RD ST***	***41-9,13***
MCGEE'S OLD TIME PHOTOS	***1107 FRONT ST***	***44-13***
PDC PROPERTIES	***428 J ST***	***45-13,14***
FREDERICKSEN TANK LINES	***850 DELTA LN***	***50-13***
RICE GROWERS ASSOCIATION OF CA	***901 S RIVER RD***	***62-13***
723 "S" ST SITE (FORMER JUNKYA	***723 S ST***	***67-13,14***

Emissions Inventory Data: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2005 has revealed that there are 6 EMI sites within the searched area.

Site	Address	Map ID
CITY OF W SACRAMENTO, WTR TRMT	***400 NORTH HARBOR ROAD***	***13-7,8***
MCI TELECOMMUNICATION CORPORAT	***2820 KOVR DR***	***21-8***
W SACRAMENTO, CITY OF PUMP STN	***201 F STREET***	***38-9***
UNION PACIFIC RAILROAD-SACRAME	***401 I ST***	***39-9,10,13,14***
UNIVAR USA, INC	***850 SOUTH RIVER ROAD***	***60-13***
RICE GROWERS ASSOCIATION OF CA	***901 S RIVER RD***	***62-13***

EXECUTIVE SUMMARY

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 08/28/2007 has revealed that there are 28 ENVIROSTOR sites within the searched area.

Site	Address	Map ID
TWO RIVERS ELEMENTARY SCHOOL Facility Status: No Further Action	***3201 WEST RIVER DRIVE***	***1-3***
JIBBOOM JUNKYARD Facility Status: Certified	***240-260 JIBBOOM STREET***	***19-9***
1X CAL DEPT OF WATER RESOURCES Facility Status: Certified / Operation & Maintenance	***240 JIBBOOM ST***	***19-9***
CAPITOL PLATING CORPORATION Facility Status: Active	***319 3RD STREET***	***32-9***
B O R INDUSTRIES, INC Facility Status: Inactive - Needs Evaluation	2505 RICE AVENUE	33-8
PETROLEUM TANK LINE Facility Status: Refer: RWQCB	***2600 RICE AVE***	***33-8***
TOM'S HOUSE OF HYDRAULICS INC Facility Status: Refer: Other Agency	***2904 DULUTH ST***	***36-8***
JAR BUILDING - GERLINGER MOTOR Facility Status: Refer: RWQCB	3020 / 3040 DULUTH ST	37-7,8
UP, DOWNTOWN SAC - REDEVELOPME Facility Status: Active	***401 I STREET***	***39-9,10,13,14***
SOUTHERN PACIFIC TRANS CO Facility Status: Refer: Other Agency	***401 I ST***	***39-9,10,13,14***
UP, DOWNTOWN SAC - LAGOON Facility Status: Active	***401 I STREET***	***39-9,10,13,14***
SP, SAC - BATTERY SHOP YARD Facility Status: Certified	***401 I STREET***	***39-9,10,13,14***
SP, SAC - SAND PILES Facility Status: Certified	***401 I STREET***	***39-9,10,13,14***
SP, SAC - SACRAMENTO STATION Facility Status: Certified	***401 I STREET***	***39-9,10,13,14***
UP, DOWNTOWN SAC - CENTRAL SHO Facility Status: Active Facility Status: Certified / Operation & Maintenance	***401 I STREET***	***39-9,10,13,14***
UP, DOWNTOWN SAC - MANUFACTURE Facility Status: Active	***400 I STREET***	***39-9,10,13,14***
SUNSHINE LAUNDRY AND CLEANERS Facility Status: Refer: Other Agency	820 MERKLEY AVENUE	49-13
H AND H CLEANERS Facility Status: Refer: Other Agency	1231 MERKLEY AVENUE	53-13

EXECUTIVE SUMMARY

Site	Address	Map ID
WESTCO TECHNOLOGIES Facility Status: Refer: RWQCB	801 SOUTH RIVER RD.	54-13
FABRICARE ONE HOUR MARTINIZING Facility Status: Refer: Other Agency	827 JEFFERSON BOULEVARD	55-12,13
A-B-C CLEANERS Facility Status: Refer: Other Agency	1120 7TH STREET	56-14
PAYLESS CLEANERS (2) Facility Status: Refer: Other Agency	1351 MERKLEY AVENUE	58-12,13
SACRAMENTO STUCCO CO. Facility Status: Active	***860 RISKE LANE***	***59-13***
UNIVAR USA, INC Facility Status: Refer: RWQCB	***850 SOUTH RIVER ROAD***	***60-13***
RICE GROWERS ASSOCIATION OF CA Facility Status: No Further Action	***901 S RIVER RD***	***62-13***
PG&E - SACRAMENTO SITE Facility Status: Active	***2000 FRONT STREET***	***64-13***
SMUD, FRONT & T STREETS Facility Status: Active	***FRONT / T STREETS***	***65-13***
723 "S" ST SITE (FORMER JUNKYA Facility Status: Refer: Other Agency	***723 S ST***	***67-13,14***

EDR PROPRIETARY RECORDS

EDR Manufactured Gas Plants: The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the Manufactured Gas Plants list, as provided by EDR, has revealed that there are 4 Manufactured Gas Plants sites within the searched area.

Site	Address	Map ID
UP, DOWNTOWN SAC - MANUFACTURE	400 I STREET	39-9,10,13,14
UP, DOWNROWN SAC-MANUFACTURED	400 I STREET	39-9,10,13,14
PG AND E SACRAMENTO SITE	2000 FRONT STREET	64-13
PACIFIC GAS AND ELECTRIC CO	101 U STREET	66-13

EXECUTIVE SUMMARY

Please refer to the end of the findings report for unmapped orphan sites due to poor or inadequate address information.

Section 1

Overview and Key Map

Overview Map



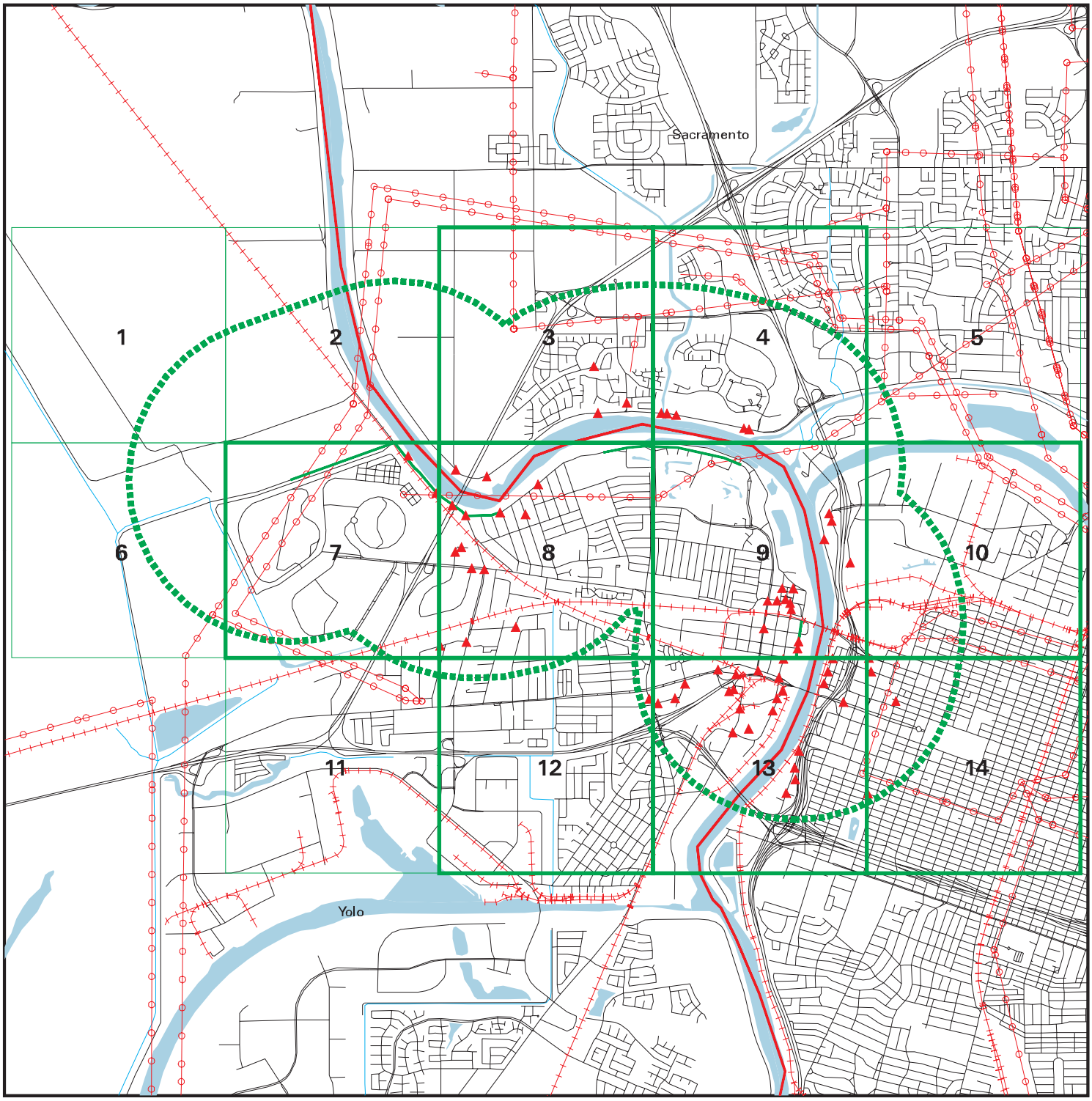
EDR DataMap® - Environmental Atlas

West Sacramento EIP

EDR Environmental Data Resources Inc

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Key Map



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- Waterways
- Railroads
- Study Boundary
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

0 1/2 1

Scale in Miles

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Section 2

Focus Maps and Findings

Focus Map 1



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

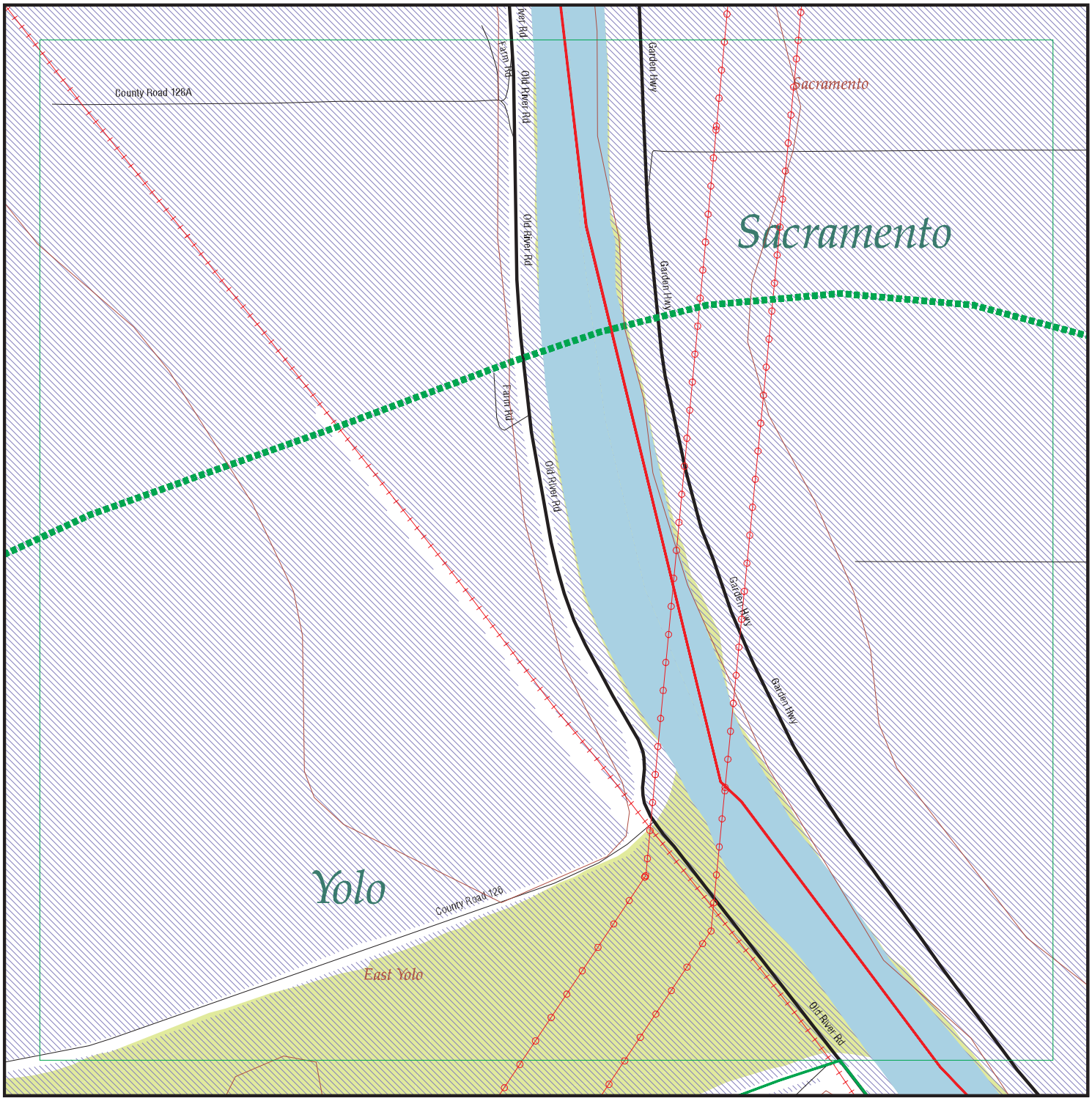
Scale in Miles

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FOCUS MAP 1 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST
WOODLAND	S106486375	AGRIFORM FARM SUPPLY CO.	HIGHWAY 113 / COUNTY ROAD 18C	95776	SLIC
WOODLAND	U004003638	EDSON APIARIES	CR 98/GIBSON, RT 4 BOX 585	95776	UST
WOODLAND	U003938649	ROBERT'S AM/PM MINI-MART	450 COUNTY RD 102	95776	UST

Focus Map 2



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

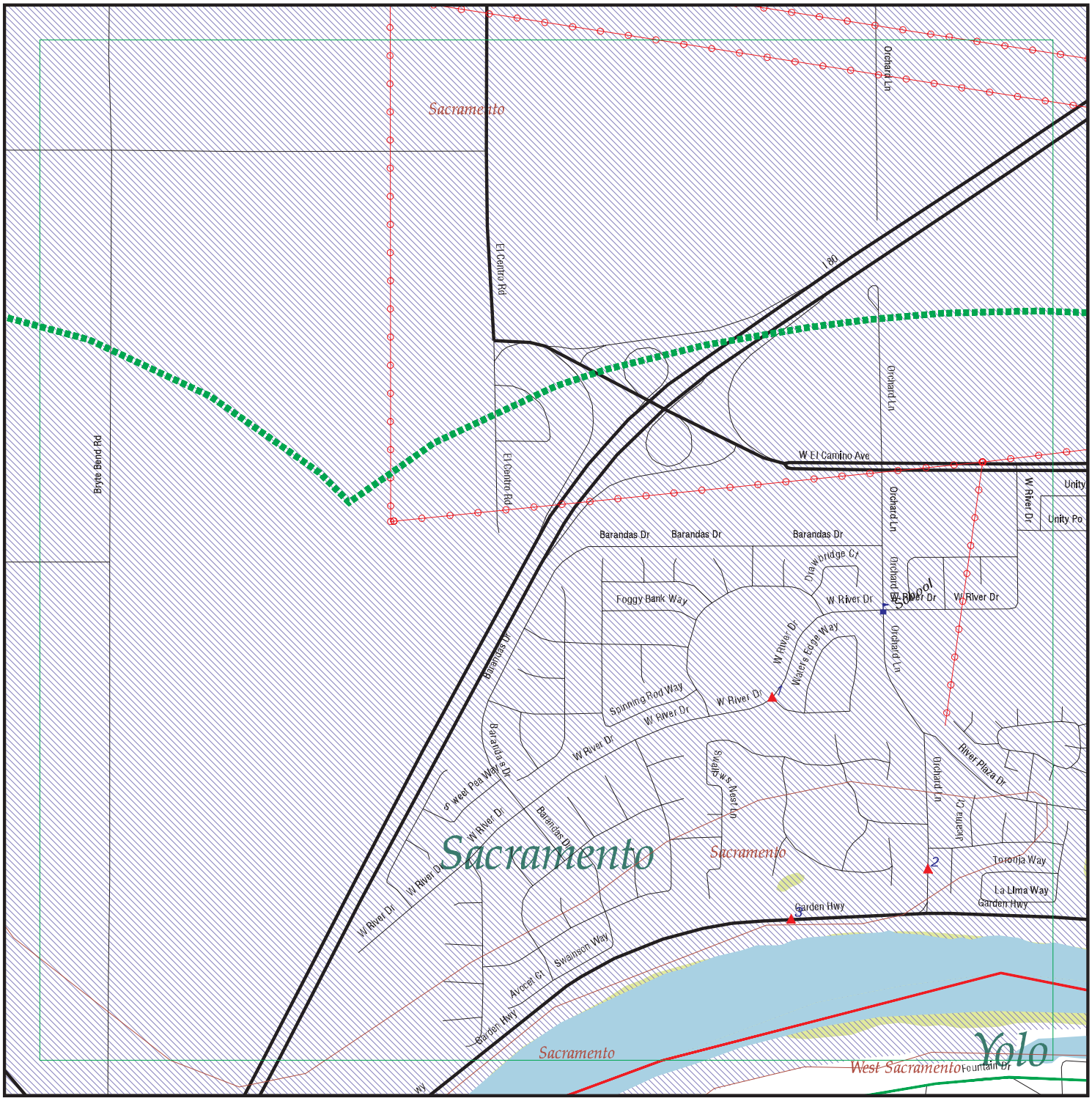
Scale in Miles

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FOCUS MAP 2 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	U001614227	PORT OF SACRAMENTO-TERMINAL	BASE OF HARBOR BLVD.	95691	HIST UST
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	U001614181	DESERET FARMS	2518 COUNTY ROAD 117	95691	HIST UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST

Focus Map 3



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

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N

0 1/8 1/4

Scale in Miles

FOCUS MAP 3 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRA TSD	0
RCRA Lg. Quan. Gen.	0
RCRA Sm. Quan. Gen.	0
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	0
RAATS	0
STATE AND LOCAL RECORDS	
Hist Cal-Sites	0
CA Bond Exp. Plan	0
SCH	1
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	0

FOCUS MAP 3 SUMMARY

Database	Total Plotted
Cortese	1
SWRCY	0
LUST	1
CA FID UST	1
SLIC	0
UST	0
HIST UST	1
AST	0
LIENS	0
SWEEPS UST	1
CHMIRS	0
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	0
HAZNET	0
EMI	0
HAULERS	0
ENVIROSTOR	1
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number
1	**TWO RIVERS ELEMENTARY SCHOOL** **3201 WEST RIVER DRIVE** **SACRAMENTO, CA 95833**	**SCH** **ENVIROSTOR**	**S104549121** **N/A**

SCH:

Facility ID:	34010001
Site Type:	School Investigation
Site Type Detail:	School
Acres:	11.5
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	Not reported
Supervisor:	Charles Ridenour
Division Branch:	School Evaluation - Glendale / Sacramento
Site Code:	104078
Assembly:	05
Senate:	06
Special Program Status:	Not reported
Status:	No Further Action
Status Date:	2000-03-24 00:00:00
Restricted Use:	NO
Funding:	School District
Latitude:	38.611537
Longitude:	-121.529685
Alias Name:	NATOMAS USD TWO RIVERS ELEMENTARY SCHOOL 34010001 104078 NATOMAS USD-WILLOW CREEK ELEM/VCA
Alias Type:	Project Code (Site Code) Envirostor ID Number Alternate Name Alternate Name Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	2001-02-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	2000-03-24 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	2000-05-18 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Workplan
Completed Date:	2000-05-11 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

TWO RIVERS ELEMENTARY SCHOOL (Continued) **S104549121**

Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NMA
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	, 30308, 30008, 10150, 30006, 30007
Potenital Description:	Heptachlor
Potenital Description:	Heptachlor
Potenital Description:	DDT
Potenital Description:	* delta-BHC (delta-HCH)
Potenital Description:	DDD
Potenital Description:	DDE
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	AGRICULTURAL - ROW CROPS

ENVIROSTOR:

Site Type:	School Investigation
Site Type Detailed:	School
Acres:	11.5
NPL:	NO
Regulatory Agencies:	DTSC
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Charles Ridenour
Division Branch:	School Evaluation - Glendale / Sacramento
Facility ID:	34010001
Site Code:	104078
Assembly:	05
Senate:	06
Special Program:	Not reported
Status:	No Further Action
Status Date:	2000-03-24 00:00:00
Restricted Use:	NO
Funding:	School District
Latitude:	38.611537
Longitude:	-121.529685
Alias Name:	NATOMAS USD
	TWO RIVERS ELEMENTARY SCHOOL
	34010001
	104078
	NATOMAS USD-WILLOW CREEK ELEM/VCA
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo

Map ID	Site	Database(s)	EPA ID Number

TWO RIVERS ELEMENTARY SCHOOL (Continued) **S104549121**

Completed Date:	2001-02-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	2000-03-24 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	2000-05-18 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Workplan
Completed Date:	2000-05-11 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NMA
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	, 30308, 30008, 10150, 30006, 30007
Potenital Description:	Heptachlor
Potenital Description:	Heptachlor
Potenital Description:	DDT
Potenital Description:	* delta-BHC (delta-HCH)
Potenital Description:	DDD
Potenital Description:	DDE
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	AGRICULTURAL - ROW CROPS

---

2 **POST PROPERTY** **LUST** **S103427254**
2300 ORCHARD LN **Sacramento Co. CS** **N/A**
SACRAMENTO, CA 95833

LUST:

Region:	STATE
Case Type:	Other ground water affected
Cross Street:	RIVER ROAD
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	SAS
How Stopped:	Other Means
Leak Cause:	UNK
Leak Source:	UNK
Global Id:	T0606700844
Stop Date:	Not reported
Confirm Leak:	1995-03-14 00:00:00
Workplan:	Not reported
Prelim Assess:	1996-11-27 00:00:00
Pollution Char:	1997-01-03 00:00:00
Remed Plan:	Not reported

Map ID	Site	Database(s)	EPA ID Number

POST PROPERTY (Continued) **S103427254**

Remed Action: Not reported
Monitoring: 2004-04-30 00:00:00
Close Date: 2004-09-24 00:00:00
Discover Date: 1995-03-14 00:00:00
Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1996-06-10 00:00:00
Review Date: 2002-03-25 00:00:00
Enter Date: 1995-03-31 00:00:00
MTBE Date: 2001-12-19 00:00:00
GW Qualifier: <
Soil Qualifier: Not reported
Max MTBE GW ppb: 5
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: 12034, 80066
Contact Person: Not reported
Responsible Party: WILLIAM & LINA PRUITT
RP Address: C/O KEVIN POST, 3963 EASTSIDE ROAD
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: Not reported
MTBE Conc: 1
MTBE Fuel: 0
MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: VJF
Staff Initials: SJE
Lead Agency: Local Agency
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: MUN
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: C565
Case Number: 341016
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 341016
Staff Initials: VJF
Substance: Not reported
Case Type: Other ground water affected
Status: Case Closed
Lead Agency: Local
Program: LUST

Map ID	Site	Database(s)	EPA ID Number

POST PROPERTY (Continued) **S103427254**

MTBE Code: 1

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	C565
Lead Staff:	ERIKSON, S.
Lead Agency:	L
Remedial Action Taken:	0
Substance:	Automotive(motor gasoline and additives)
Date Reported:	6/10/1996
Facility Id:	RO0000956
Case Type:	Other ground water affected
Case Closed:	Y
Date Closed:	**9/24/2004**

---

2 **POST PROPERTY (ABANDENT)** **Cortese** **S102435421**
2300 ORCHARD LN **N/A**
SACRAMENTO, CA 95833

Cortese:

Region:	CORTESE
Facility Addr2:	2300 ORCHARD LN

---

3 **PERRY FARMS** **Sacramento Co. ML** **S105269467**
1830 GARDEN HWY **N/A**
SACRAMENTO, CA 95834

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Farm-No Fee
Billing Codes UST:	Farm-No Fee
WG Bill Code:	Farm-No Fee
Target Property Bill Cod:	50
Food Bill Code:	53
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

Map ID	Site	Database(s)	EPA ID Number
3	**PERRY FARMS** **1831 GARDEN HWY** **SACRAMENTO, CA 95833**	**CA FID UST** **SWEEPS UST**	**S101628541** **N/A**

CA FID UST:

Facility ID:	34007003
Regulated By:	UTNKA
Regulated ID:	00027291
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	9169250979
Mail To:	Not reported
Mailing Address:	1831 GARDEN HWY
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SACRAMENTO 95833
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	27291
Number:	9
Board Of Equalization:	Not reported
Ref Date:	07-01-85
Act Date:	Not reported
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	1
Swrcb Tank Id:	34-000-027291-000001
Actv Date:	07-01-85
Capacity:	1000
Tank Use:	M.V. FUEL
Stg:	P
Content:	LEADED
Number Of Tanks:	1

Map ID	Site	Database(s)	EPA ID Number
3	**PERRY FARMS** **1831 GARDEN HWY** **SACRAMENTO, CA 95833**	**HIST UST**	**U001615949** **N/A**

HIST UST:

Region:	STATE
Facility ID:	00000027291
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00001000
Facility Type:	Other
Other Type:	FARM
Total Tanks:	0001
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	None

Map ID	Site	Database(s)	EPA ID Number

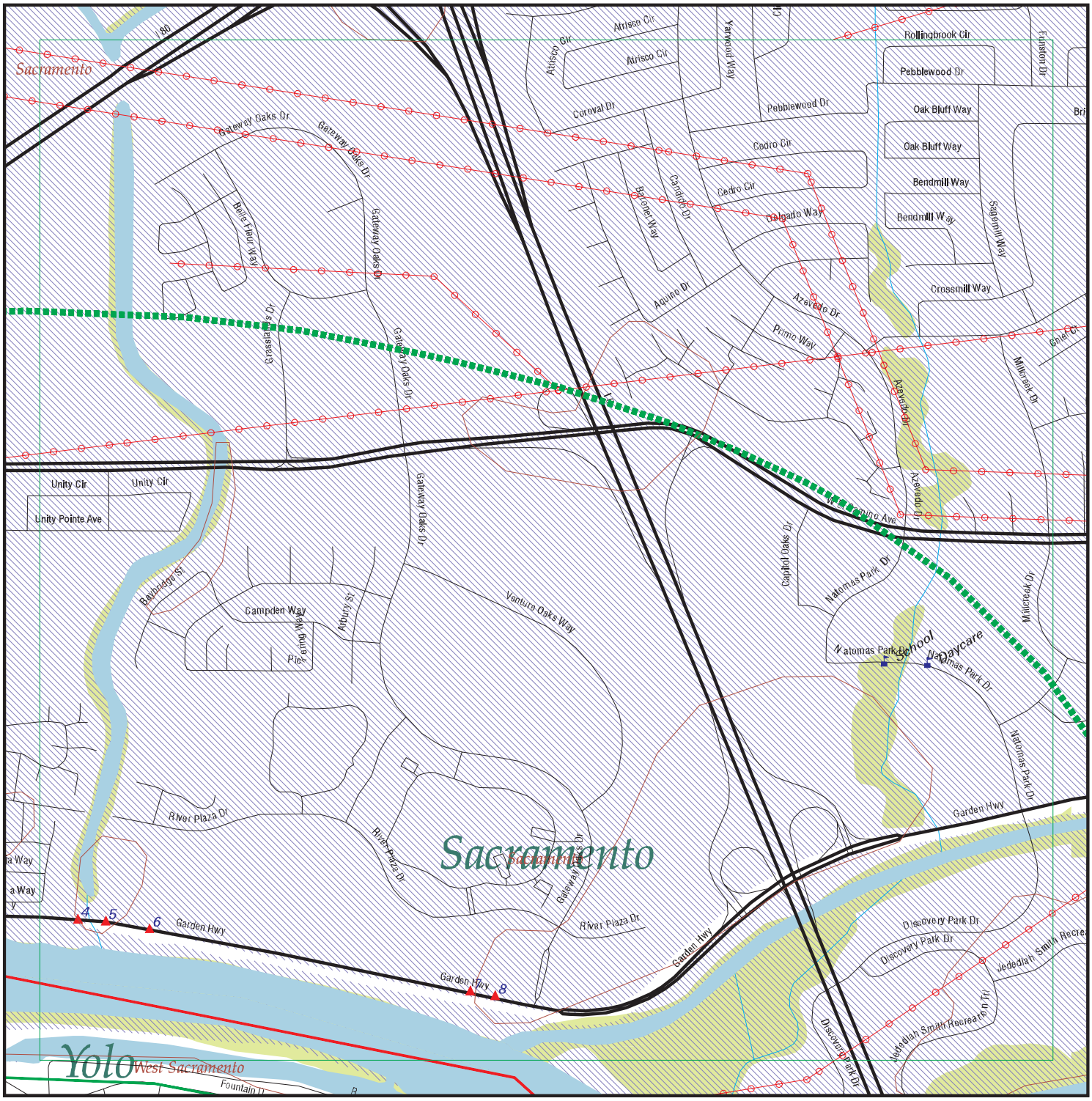
PERRY FARMS (Continued) **U001615949**

Contact Name: JOE OR JOAQUIN PERRY
Telephone: 9169250979
Owner Name: PERRY FARMS
Owner Address: 1831 GARDEN HWY
Owner City,St,Zip: SACRAMENTO, CA 95833

FOCUS MAP 3 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SACRAMENTO	S106387653	DISCOVERY PLAZA VETERINARY CLINIC	1500 W EL CAMINO AVE 14	95833	Sacramento Co. ML
SACRAMENTO	S106967497	SAGE II CLEANERS	2550 W EL CAMINO AVE 6	95833	Sacramento Co. ML
SACRAMENTO	S108195754	SUMP 160	SHOREBIRD DR	95833	Sacramento Co. ML
WEST SACRAMENTO	U004003776	LIGHTHOUSE MARINA - PHASE IB	CR RD-DISCOVERY PARK 156LE	95605	UST

Focus Map 4



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 4 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRA TSD	0
RCRA Lg. Quan. Gen.	0
RCRA Sm. Quan. Gen.	0
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	0
RAATS	0
STATE AND LOCAL RECORDS	
Hist Cal-Sites	0
CA Bond Exp. Plan	0
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	0

FOCUS MAP 4 SUMMARY

Database	Total Plotted
Cortese	0
SWRCY	0
LUST	0
CA FID UST	0
SLIC	0
UST	0
HIST UST	1
AST	0
LIENS	0
SWEEPS UST	1
CHMIRS	0
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	0
HAZNET	1
EMI	0
HAULERS	0
ENVIROSTOR	0
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number
4	**RECLAMATION DISTRICT 1000** **1633 GARDEN HWY** **SACRAMENTO, CA 95833**	**Sacramento Co. ML**	**S105269466** **N/A**

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Disclaimer
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	50
Food Bill Code:	50
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

Map ID	Site	Database(s)	EPA ID Number
5	**CALIFORNIA CUSTOM MARINE** **1610 GARDEN HWY** **SACRAMENTO, CA 95833**	**HAZNET** **Sacramento Co. ML**	**S100931569** **N/A**

HAZNET:

Gepaid:	CAL000061524
Contact:	CALIFORNIA CUSTOM MARINE
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1610 GARDEN HWY
Mailing City,St,Zip:	SACRAMENTO, CA 958330000
Gen County:	Sacramento
TSD EPA ID:	CAT080011059
TSD County:	Los Angeles
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
Disposal Method:	Not reported
Tons:	.1876
Facility County:	Sacramento

Sacramento Co. ML:

FD:	Not reported
Billing Codes BP:	I
Billing Codes UST:	Not reported
WG Bill Code:	I
Target Property Bill Cod:	Not reported
Food Bill Code:	Not reported
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported

Map ID	Site	Database(s)	EPA ID Number

CALIFORNIA CUSTOM MARINE (Continued) **S100931569**

UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	Not reported
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	Not reported

---

6 **THE VIRGIN STURGEON** **HIST UST** **U001615951**
1577 GARDEN HWY **Sacramento Co. ML** **N/A**
SACRAMENTO, CA 95833

HIST UST:

Region:	STATE
Facility ID:	00000018508
Tank Num:	001
Container Num:	1946
Year Installed:	Not reported
Tank Capacity:	00002000
Facility Type:	Other
Other Type:	RESTAURANT/BAR
Total Tanks:	0001
Tank Used for:	WASTE
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual
Contact Name:	LARAINE PATCHING
Telephone:	9169212694
Owner Name:	THE VIRGIN STURGEON, INC.
Owner Address:	1577 GARDEN HIGHWAY
Owner City,St,Zip:	SACRAMENTO, CA 95833

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Disclaimer
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	50
Food Bill Code:	50
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

Map ID	Site	Database(s)	EPA ID Number

7 **SIERRA HEALTH FOUNDATION** **Sacramento Co. ML** **S105269465**
1351 GARDEN HWY **N/A**
SACRAMENTO, CA 95833

Sacramento Co. ML:

FD:	Not reported
Billing Codes BP:	Disclaimer
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	50
Food Bill Code:	50
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	00093055
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

---

8 **SIERRA HEALTH FOUNDATION** **Sacramento Co. ML** **S105269464**
1331 GARDEN HWY **SWEEPS UST** **N/A**
SACRAMENTO, CA 95833

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Out of Business
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	51
Food Bill Code:	51
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

SWEEPS UST:

Status:	Not reported
Comp Number:	93055
Number:	Not reported
Board Of Equalization:	Not reported

Map ID	Site	Database(s)	EPA ID Number

SIERRA HEALTH FOUNDATION (Continued) **S105269464**

Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	34-000-093055-000001
Actv Date:	Not reported
Capacity:	1000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	LEADED
Number Of Tanks:	1

---

8 **VILLAGE MARINA** **Sacramento Co. ML** **S105269476**
1331 GARDEN HY #A **N/A**
SACRAMENTO, CA 95834

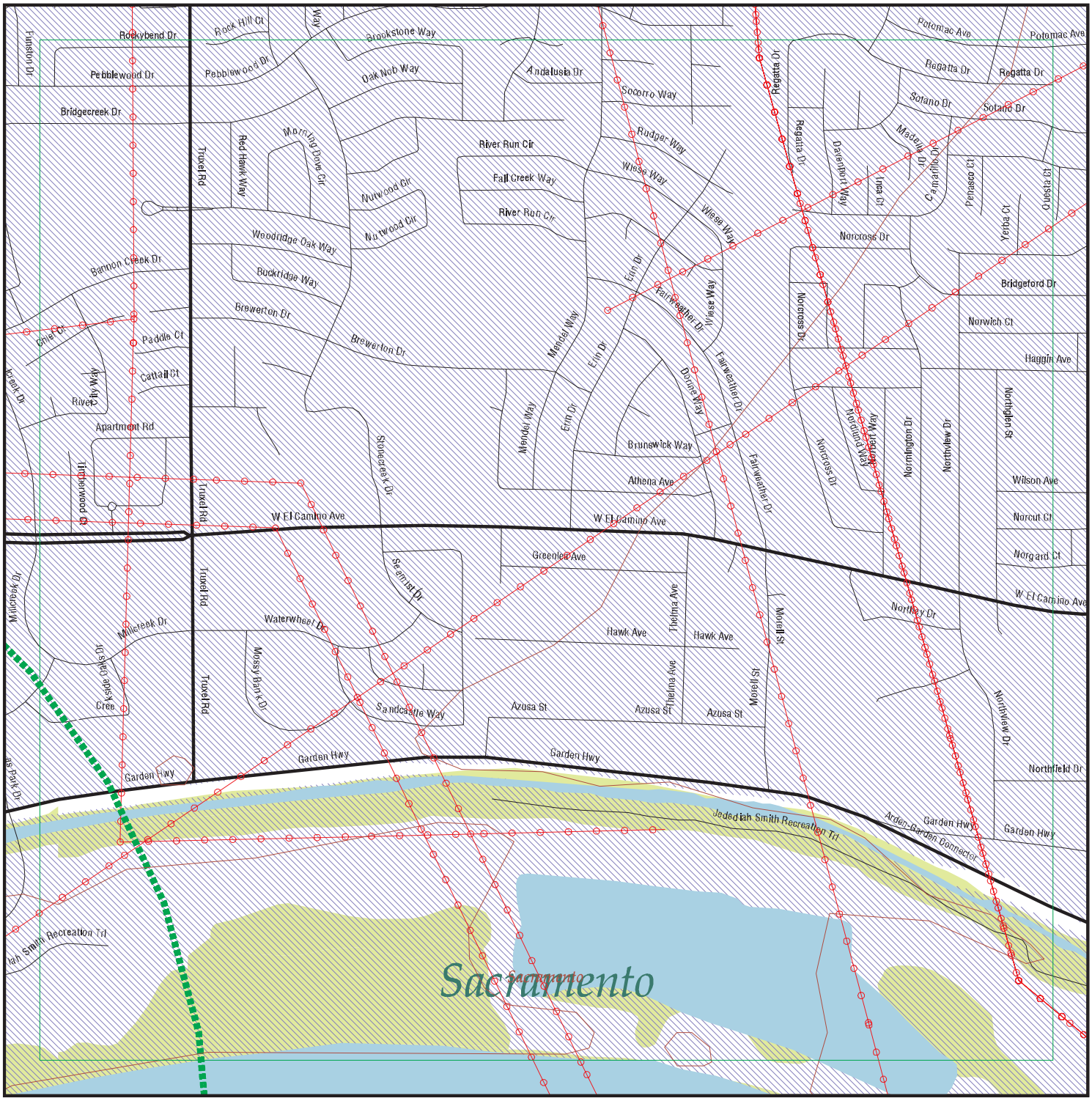
Sacramento Co. ML:

FD:	U
Billing Codes BP:	Out of Business
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	51
Food Bill Code:	51
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

FOCUS MAP 4 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SACRAMENTO	S106387653	DISCOVERY PLAZA VETERINARY CLINIC	1500 W EL CAMINO AVE 14	95833	Sacramento Co. ML
SACRAMENTO	S106967497	SAGE II CLEANERS	2550 W EL CAMINO AVE 6	95833	Sacramento Co. ML
SACRAMENTO	S106967457	NOLTE & ASSOCIATES	2495 NATOMAS PARK DR 4TH FLR	95833	Sacramento Co. ML
WEST SACRAMENTO	U004003776	LIGHTHOUSE MARINA - PHASE IB	CR RD-DISCOVERY PARK 156LE	95605	UST

Focus Map 5



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

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N

0 1/8 1/4

Scale in Miles

FOCUS MAP 5 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SACRAMENTO	1003878554	SMUD NORTH CITY SUBSTA	20TH & N B STS	95814	CERC-NFRAP
SACRAMENTO	1003878854	SACRAMENTO MUNICIPAL LDFL	28TH & A ST	95814	CERC-NFRAP
SACRAMENTO	1010082283	HERITAGE DRY CLEANERS	13100 BLOCK OF MONO WAY	95814	CERCLIS
SACRAMENTO	1003879067	UNION CARBIDE CORP-LINDE DIV	CARBIDE CT	95814	CERC-NFRAP
SACRAMENTO	S106387653	DISCOVERY PLAZA VETERINARY CLINIC	1500 W EL CAMINO AVE 14	95833	Sacramento Co. ML
SACRAMENTO	S106967497	SAGE II CLEANERS	2550 W EL CAMINO AVE 6	95833	Sacramento Co. ML
SACRAMENTO	S103678764	SMUD, FRONT & T STREETS	FRONT / T ST	95814	HAZNET, Cortese
SACRAMENTO	S106152431	AT&T MOBILITY-WEST EL CAMINO	2528 MENDEL WAY	95833	Sacramento Co. ML
SACRAMENTO	S106967457	NOLTE & ASSOCIATES	2495 NATOMAS PARK DR 4TH FLR	95833	Sacramento Co. ML

Focus Map 6



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

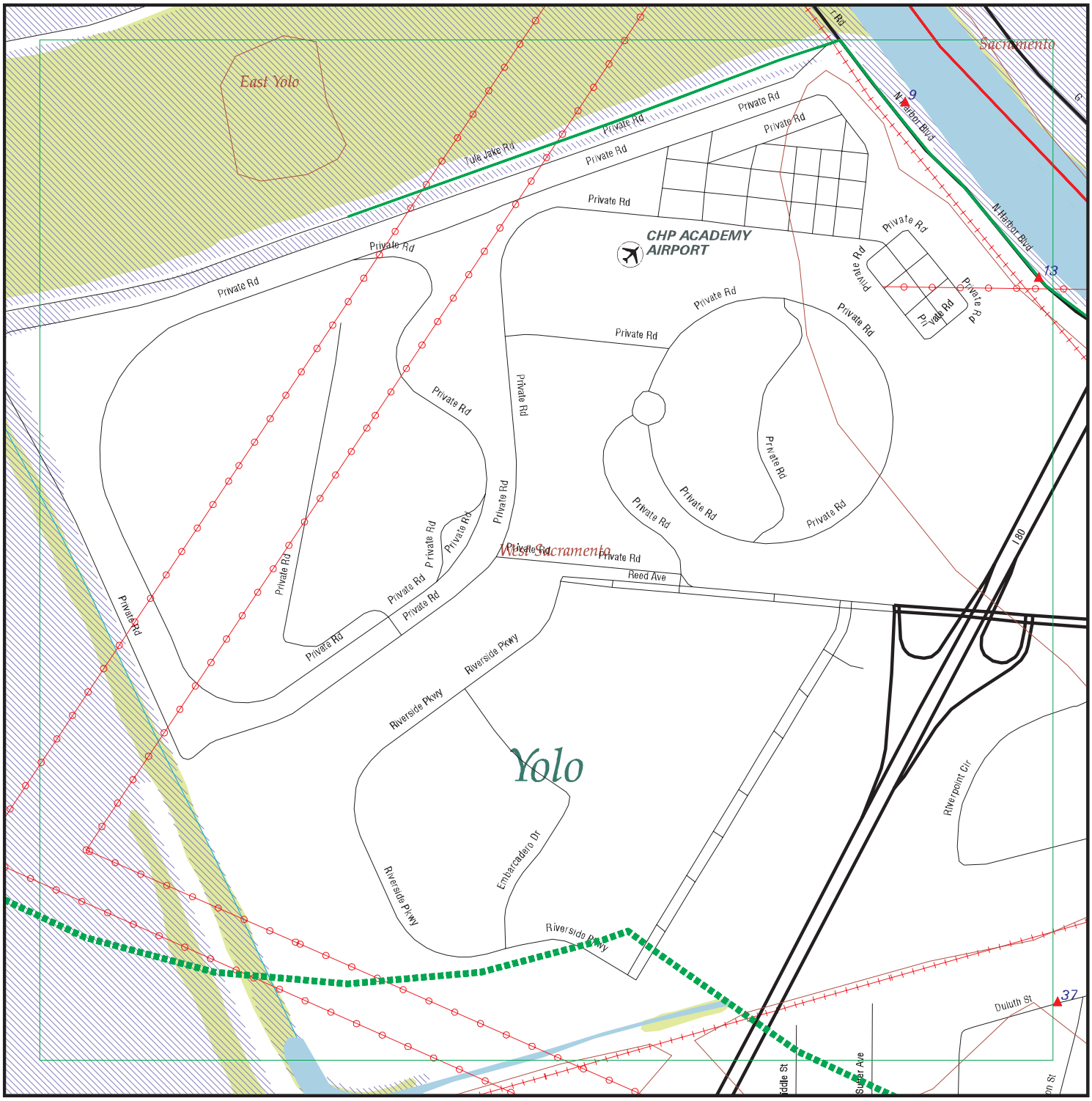
Scale in Miles

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FOCUS MAP 6 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST
WOODLAND	S106486375	AGRIFORM FARM SUPPLY CO.	HIGHWAY 113 / COUNTY ROAD 18C	95776	SLIC
WOODLAND	U004003638	EDSON APIARIES	CR 98/GIBSON, RT 4 BOX 585	95776	UST
WOODLAND	U003938649	ROBERT'S AM/PM MINI-MART	450 COUNTY RD 102	95776	UST

Focus Map 7



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 7 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRA TSD	0
RCRA Lg. Quan. Gen.	0
RCRA Sm. Quan. Gen.	0
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	1
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	1
RAATS	0
STATE AND LOCAL RECORDS	
Hist Cal-Sites	0
CA Bond Exp. Plan	0
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	0

FOCUS MAP 7 SUMMARY

Database	Total Plotted
Cortese	0
SWRCY	0
LUST	0
CA FID UST	0
SLIC	0
UST	0
HIST UST	0
AST	0
LIENS	0
SWEEPS UST	0
CHMIRS	0
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	0
HAZNET	1
EMI	1
HAULERS	0
ENVIROSTOR	1
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number

9 **SACRAMENTO DISTRICT ENGINEER YARD-WEIR AREA** **FUDS** **1007372678**
N/A

WEST SACRAMENTO, CA

FUDS:

Federal Facility ID:	CA9799F5738
FUDS #:	J09CA0798
Facility Name:	Sacramento District Engineer Yard-Weir Area
City:	WEST SACRAMENTO
State:	CA
EPA Region:	9
County:	YOLO
Congressional District:	01
US Army District:	Sacramento District (SPK)
Fiscal Year:	2006
Telephone:	916-557-7461
NPL Status:	Not Listed
RAB:	Not reported
CTC:	758.20
Current Owner:	CITY
Current Prog:	Not reported
Future Prog:	Not reported

FUDS Description Details:

The 2.0-acre site is located 3 1/2 miles west of the City of Sacramento in West Sacramento, Yolo County, CA. The Sacramento and San Joaquin Drainage District currently own the land.

FUDS History Details:

The site was established prior to 1 January 1943 and was known as the Sacramento District Engineer Yard - Weir Area. The site was used by the Army for river and harbor purposes. On 11 August 1954, 2.0 fee acres were conveyed to the Sacramento and San n Joaquin Drainage District. There were no recapture provisions. Currently, there are no potential hazards identified at this location, further investigation is needed.

---

13 **SHIMMICK CONSTRUCTION INC** **HAZNET** **S103657310**
400 N HARBOR BLVD **N/A**
WEST SACRAMENTO, CA 95605

HAZNET:

Gepaid:	CAL000259297
Contact:	KRISTIAN BENSON - PROJ ENG
Telephone:	9169190181
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	24200 CLAWITER RD
Mailing City,St,Zip:	HAYWARD, CA 945450000
Gen County:	Yolo
TSD EPA ID:	CAD008364432
TSD County:	Yolo
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.77
Facility County:	Yolo

Gepaid:	CAL000259297
Contact:	KRISTIAN BENSON - PROJ ENG
Telephone:	9169190181

Map ID	Site	Database(s)	EPA ID Number

SHIMMICK CONSTRUCTION INC (Continued) **S103657310**

Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 24200 CLAWITER RD
Mailing City,St,Zip: HAYWARD, CA 945450000
Gen County: Yolo
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Recycler
Tons: 0.35
Facility County: Not reported

Gepaid: CAL000169372
Contact: CITY OF WEST SACRAMENTO
Telephone: 9163735850
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1951 S RIVER RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912816
Gen County: Sacramento
TSD EPA ID: CAD009452657
TSD County: San Mateo
Waste Category: Laboratory waste chemicals
Disposal Method: Recycler
Tons: .0060
Facility County: Sacramento

Gepaid: CAL000169372
Contact: CITY OF WEST SACRAMENTO
Telephone: 9163735850
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1951 S RIVER RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912816
Gen County: Sacramento
TSD EPA ID: CAD009452657
TSD County: San Mateo
Waste Category: Laboratory waste chemicals
Disposal Method: Treatment, Incineration
Tons: .0325
Facility County: Sacramento

Gepaid: CAL000169372
Contact: DAN MOUNT/WTP SUPERINTENDENT
Telephone: 9163716818
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1951 S RIVER RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912816
Gen County: Yolo
TSD EPA ID: Not reported
TSD County: Alameda
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.04
Facility County: Not reported

Map ID	Site	Database(s)	EPA ID Number
	SHIMMICK CONSTRUCTION INC (Continued)		**S103657310**

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

---

13 **CITY OF W SACRAMENTO, WTR TRMT** **FINDS 1006826161**
400 NORTH HARBOR ROAD **EMI 110013852170**
WEST SACRAMENTO, CA 95691

FINDS:
Other Pertinent Environmental Activity Identified at Site

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

EMI:

Year:	1999
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD

Map ID	Site	Database(s)	EPA ID Number

CITY OF W SACRAMENTO, WTR TRMT (Continued) **1006826161**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.02390343
Reactive Organic Gases Tons/Yr:	0.02
Carbon Monoxide Emissions Tons/Yr:	0.05
NOX - Oxides of Nitrogen Tons/Yr:	0.26

Map ID	Site	Database(s)	EPA ID Number

CITY OF W SACRAMENTO, WTR TRMT (Continued) **1006826161**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0.010245902
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0.01
Year:	2005
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0239034301422254093
Reactive Organic Gases Tons/Yr:	.02
Carbon Monoxide Emissions Tons/Yr:	.05
NOX - Oxides of Nitrogen Tons/Yr:	.26
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	.0102459016393442622
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.01

---

37 **JAR BUILDING - GERLINGER MOTOR PARTS** **ENVIROSTOR** **S100183668**
3020 / 3040 DULUTH STREET **N/A**
WEST SACRAMENTO, CA 95691

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57370001
Site Code:	Not reported
Assembly:	Not reported
Senate:	Not reported
Special Program:	Not reported
Status:	Refer: RWQCB
Status Date:	1987-01-29 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	0
Longitude:	0
Alias Name:	57370001 GERLINGER MOTOR PARTS
Alias Type:	Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	FACILITY IDENTIFIED: OBSERVED ON DRIVE BYS - ACTIVE SITE. SLUDGES,LIQUIDS DISCHARGED TO STORM CANAL. FINAL STRATEGY REFERRED TO HAZARDOUS WASTE MANAGEMENT BRANCH, COUNTY HEALTH AND THE REGIONAL WATER QUALITY CONTROL BOARD.SITE SCREENING DONE. NO INFORMATION IN FILE.
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

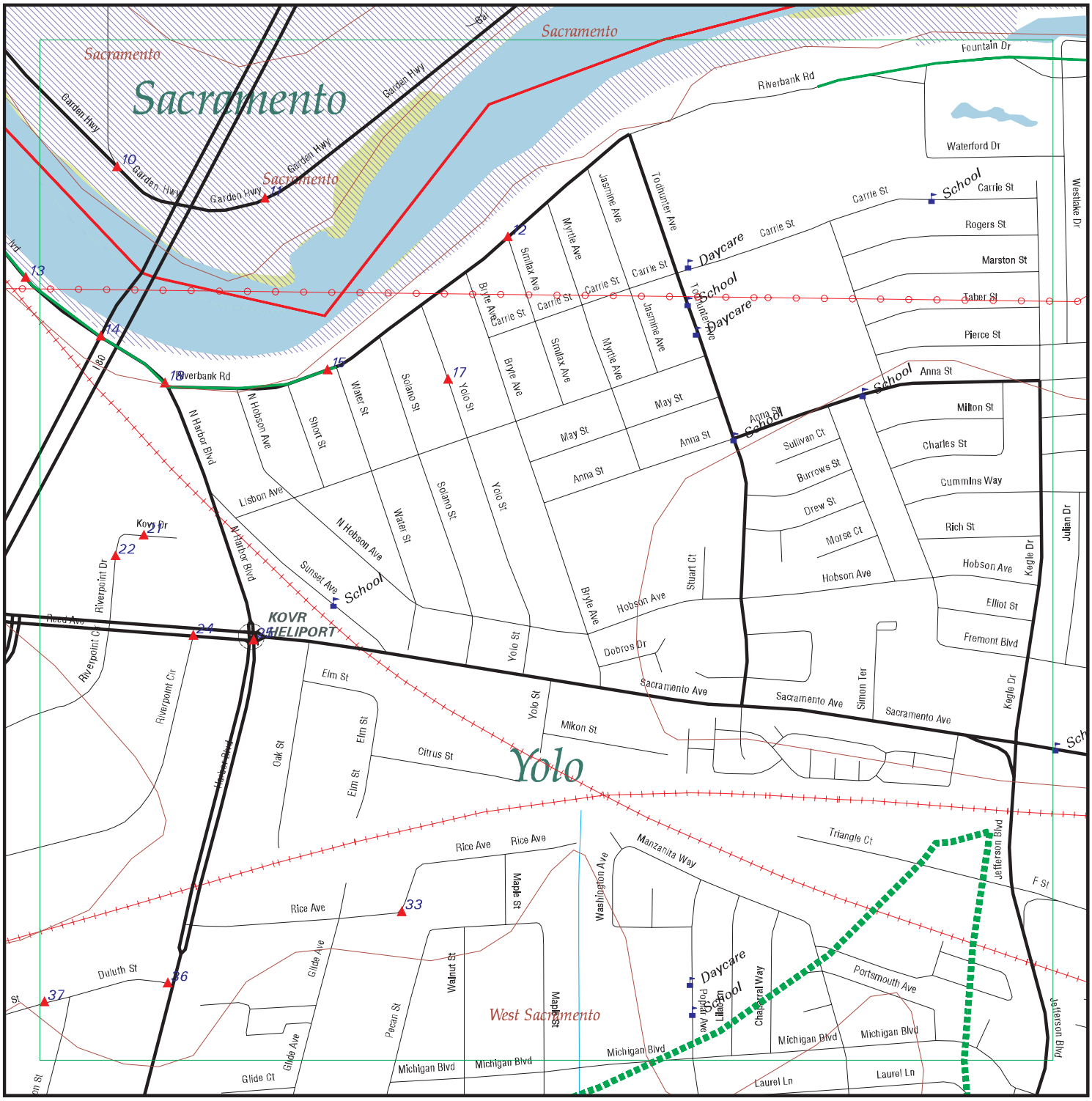
JAR BUILDING - GERLINGER MOTOR PARTS (Continued) **S100183668**

Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1982-03-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-01-29 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10197
Potenital Description:	* UNSPECIFIED SLUDGE WASTE
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

FOCUS MAP 7 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	1007370116	CALTRANS WORKERS MEMORIAL BRIDGE	INTERSTATE 80 AT POSTMILE 11.1	95691	RCRA-SQG, HAZNET
WEST SACRAMENTO	U001614227	PORT OF SACRAMENTO-TERMINAL	BASE OF HARBOR BLVD.	95691	HIST UST
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	U001614181	DESERET FARMS	2518 COUNTY ROAD 117	95691	HIST UST
WEST SACRAMENTO	U003966385	SACRAMENTO AUTO TRUCK CO	525 GALVESTON ST	95691	UST
WEST SACRAMENTO	U003850876	KEEBLER DISTRIBUTION CENTER	LOT RIVERPOINT CENTRE 28	95691	UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST

Focus Map 8



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 8 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRA TSD	0
RCRA Lg. Quan. Gen.	1
RCRA Sm. Quan. Gen.	1
ERNS	1
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	4
RAATS	0
STATE AND LOCAL RECORDS	
Hist Cal-Sites	0
CA Bond Exp. Plan	1
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	1

FOCUS MAP 8 SUMMARY

Database	Total Plotted
Cortese	3
SWRCY	0
LUST	3
CA FID UST	1
SLIC	2
UST	3
HIST UST	3
AST	1
LIENS	0
SWEEPS UST	1
CHMIRS	0
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	0
HAZNET	8
EMI	2
HAULERS	0
ENVIROSTOR	4

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number
10	**FARMING** **2350 GARDEN HWY** **SACRAMENTO, CA 95833**	**CA FID UST** **SWEEPS UST**	**S101630723** **N/A**

CA FID UST:

Facility ID:	34006983
Regulated By:	UTNKA
Regulated ID:	00022481
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	9169258311
Mail To:	Not reported
Mailing Address:	2350 GARDEN HWY
Mailing Address 2:	Not reported
Mailing City,St,Zip:	SACRAMENTO 95833
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	22481
Number:	9
Board Of Equalization:	Not reported
Ref Date:	07-01-85
Act Date:	Not reported
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	1
Swrcb Tank Id:	34-000-022481-000001
Actv Date:	07-01-85
Capacity:	500
Tank Use:	M.V. FUEL
Stg:	P
Content:	LEADED
Number Of Tanks:	1

Map ID	Site	Database(s)	EPA ID Number
10	**FARMING** **2350 GARDEN HWY** **SACRAMENTO, CA 95833**	**HIST UST**	**U001615943** **N/A**

HIST UST:

Region:	STATE
Facility ID:	00000022481
Tank Num:	001
Container Num:	1
Year Installed:	1959
Tank Capacity:	00000500
Facility Type:	Other
Other Type:	FARM
Total Tanks:	0001
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Map ID	Site	Database(s)	EPA ID Number

FARMING (Continued) **U001615943**

Contact Name: Not reported
Telephone: 9169258311
Owner Name: LAWRENCE A. RAPOSA
Owner Address: 2350 GARDEN HWY
Owner City,St,Zip: SACRAMENTO, CA 95833

---

11 **LAWRENCE RAPOSA** **Sacramento Co. ML** **S105269469**
2250 GARDEN HWY **N/A**
SACRAMENTO, CA 95834

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Farm-No Fee
Billing Codes UST:	Farm-No Fee
WG Bill Code:	Farm-No Fee
Target Property Bill Cod:	50
Food Bill Code:	53
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

---

12 **SACRAMENTO MAINTENANCE YA** **HAZNET** **S101306137**
1450 RIVERBANK **LUST** **N/A**
BRYTE, CA 95691 **Cortese**

HAZNET:

Gepaid:	CAL920606248
Contact:	STATE DEPT OF WATER RESOURCES
Telephone:	9164455744
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1450 RIVERBANK RD
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956052028
Gen County:	Yolo
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Yolo

Gepaid:	CAL920606248
Contact:	MIKE SALVADOR-UTILITY
Telephone:	9163756000

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO MAINTENANCE YA (Continued) **S101306137**

Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1450 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956052028
Gen County: Yolo
TSD EPA ID: CAD009452657
TSD County: Yolo
Waste Category: Laboratory waste chemicals
Disposal Method: Treatment, Incineration
Tons: 0
Facility County: Yolo

Gepaid: CAL920606248
Contact: MIKE SALVADOR-UTILITY
Telephone: 9163756000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1450 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956052028
Gen County: Yolo
TSD EPA ID: CAD009452657
TSD County: Yolo
Waste Category: Other organic solids
Disposal Method: Recycler
Tons: 0.05
Facility County: Yolo

Gepaid: CAL920606248
Contact: MIKE SALVADOR-UTILITY
Telephone: 9163756000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1450 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956052028
Gen County: Yolo
TSD EPA ID: CAD009452657
TSD County: Yolo
Waste Category: Laboratory waste chemicals
Disposal Method: Disposal, Land Fill
Tons: 0.01
Facility County: Yolo

Gepaid: CAL920606248
Contact: STATE DEPT OF WATER RESOURCES
Telephone: 9164455744
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1450 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956052028
Gen County: Yolo
TSD EPA ID: CAD009466392
TSD County: 7
Waste Category: Other empty containers 30 gallons or more
Disposal Method: Recycler
Tons: 3.0000
Facility County: Yolo

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO MAINTENANCE YA (Continued) **S101306137**

Click this hyperlink while viewing on your computer to access
18 additional CA_HAZNET: record(s) in the EDR Site Report.

LUST:

Region:	STATE
Case Type:	Drinking Water Aquifer affected
Cross Street:	BRYTE AVE
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	Corrosion
Leak Source:	Tank
Global Id:	T0611300022
Stop Date:	Not reported
Confirm Leak:	1994-09-13 00:00:00
Workplan:	Not reported
Prelim Assess:	1988-08-26 00:00:00
Pollution Char:	2006-05-08 00:00:00
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	Not reported
Discover Date:	1994-09-13 00:00:00
Enforcement Dt:	2001-07-02 00:00:00
Release Date:	1988-01-01 00:00:00
Review Date:	2000-10-12 00:00:00
Enter Date:	1990-01-12 00:00:00
MTBE Date:	1999-03-05 00:00:00
GW Qualifier:	=
Soil Qualifier:	Not reported
Max MTBE GW ppb:	500
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Pollution Characterization
Chemical:	Gasoline
Contact Person:	Not reported
Responsible Party:	CA DEPT OF WATER RESOURCES
RP Address:	1450 RIVERBANK RD, WEST SACRAMENTO, CA 95605
Interim:	Yes
Oversight Prgm:	LUST
MTBE Class:	B
MTBE Conc:	1
MTBE Fuel:	1
MTBE Tested:	MTBE Detected. Site tested for MTBE and MTBE detected
Staff:	DFS
Staff Initials:	BRU
Lead Agency:	Regional Board
Local Agency:	57000
Hydr Basin #:	SACRAMENTO VALLEY (5
Beneficial:	Not reported
Priority:	3
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	Not reported

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO MAINTENANCE YA (Continued) **S101306137**

Case Number: 570033
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Operator: AL ROMERO
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: IN 1988 A WASTE UST FOR HERBICIDE WAS FOUND LEAKING ON SITE LITTLE APPEARS TO HAVE BEEN DONE??? IN '94 A 3000 GAL FUEL TANK WAS PULLED. WORK PLAN WAS APPROVED BUT NO ACTION...NOV'96.

LUST:
Region: 5
Case Number: 570033
Staff Initials: DFS
Substance: GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Pollution Characterization
Lead Agency: Regional
Program: LUST
MTBE Code: 4

Cortese:
Region: CORTESE
Facility Addr2: Not reported

---

13 **SHIMMICK CONSTRUCTION INC** **HAZNET** **S103657310**
400 N HARBOR BLVD **N/A**
WEST SACRAMENTO, CA 95605

HAZNET:
Gepaid: CAL000259297
Contact: KRISTIAN BENSON - PROJ ENG
Telephone: 9169190181
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 24200 CLAWITER RD
Mailing City,St,Zip: HAYWARD, CA 945450000
Gen County: Yolo
TSD EPA ID: CAD008364432
TSD County: Yolo
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 0.77
Facility County: Yolo

Gepaid: CAL000259297
Contact: KRISTIAN BENSON - PROJ ENG
Telephone: 9169190181
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 24200 CLAWITER RD
Mailing City,St,Zip: HAYWARD, CA 945450000
Gen County: Yolo

Map ID	Site	Database(s)	EPA ID Number

SHIMMICK CONSTRUCTION INC (Continued) **S103657310**

TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Recycler
Tons: 0.35
Facility County: Not reported

Gepaid: CAL000169372
Contact: CITY OF WEST SACRAMENTO
Telephone: 9163735850
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1951 S RIVER RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912816
Gen County: Sacramento
TSD EPA ID: CAD009452657
TSD County: San Mateo
Waste Category: Laboratory waste chemicals
Disposal Method: Recycler
Tons: .0060
Facility County: Sacramento

Gepaid: CAL000169372
Contact: CITY OF WEST SACRAMENTO
Telephone: 9163735850
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1951 S RIVER RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912816
Gen County: Sacramento
TSD EPA ID: CAD009452657
TSD County: San Mateo
Waste Category: Laboratory waste chemicals
Disposal Method: Treatment, Incineration
Tons: .0325
Facility County: Sacramento

Gepaid: CAL000169372
Contact: DAN MOUNT/WTP SUPERINTENDENT
Telephone: 9163716818
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1951 S RIVER RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912816
Gen County: Yolo
TSD EPA ID: Not reported
TSD County: Alameda
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.04
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

Map ID	Site	Database(s)	EPA ID Number
13	**CITY OF W SACRAMENTO, WTR TRMT** **400 NORTH HARBOR ROAD** **WEST SACRAMENTO, CA 95691**	**FINDS** **EMI**	**1006826161** **110013852170**

FINDS:
Other Pertinent Environmental Activity Identified at Site

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

EMI:

Year:	1999
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

CITY OF W SACRAMENTO, WTR TRMT (Continued) **1006826161**

NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.02390343
Reactive Organic Gases Tons/Yr:	0.02
Carbon Monoxide Emissions Tons/Yr:	0.05
NOX - Oxides of Nitrogen Tons/Yr:	0.26
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0.010245902
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0.01

Year:	2005

Map ID	Site	Database(s)	EPA ID Number

CITY OF W SACRAMENTO, WTR TRMT (Continued) **1006826161**

Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	614
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0239034301422254093
Reactive Organic Gases Tons/Yr:	.02
Carbon Monoxide Emissions Tons/Yr:	.05
NOX - Oxides of Nitrogen Tons/Yr:	.26
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	.0102459016393442622
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.01

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14 **I-80 & HARBOR BLVD** **ERNS** **91241696**
I-80 & HARBOR BLVD **N/A**
WEST SACRAMENTO, CA

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

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15 **USACE BRYTE YARD** **UST** **U003895265**
1645 RIVERBANK RD **N/A**
WEST SACRAMENTO, CA 95605

UST:

Region:	Yolo
Facility ID:	FA0000397
Owner ID:	OW0000318
Owner Name:	US ARMY CORP OF ENGINEERS
Owner Address:	1325 J ST
Owner City,St,Zip:	SACRAMENTO, CA 95814-2922
Business Type:	99 - OTHER
Business ID:	09 - UNKNOWN
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	1,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000397

Map ID	Site	Database(s)	EPA ID Number
15	**US ARMY CORPS OF ENGINEERS** **1645 RIVERBANK ROAD** **BRYTE, CA 95605**	**HAZNET**	**S103993634** **N/A**

HAZNET:

Gepaid:	CAL000020057
Contact:	FEDERAL GOVERNMENT
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1325 J ST
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Yolo
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Tons:	.1668
Facility County:	Yolo

Gepaid:	CAL000020057
Contact:	BOB MURAKAMI
Telephone:	9165576738
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1325 J ST
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Yolo
TSD EPA ID:	CAD008252405
TSD County:	Yolo
Waste Category:	Latex waste
Disposal Method:	Recycler
Tons:	0.01
Facility County:	Yolo

Gepaid:	CAL000020057
Contact:	BOB MURAKAMI
Telephone:	9165576738
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1325 J ST
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Yolo
TSD EPA ID:	CAD008252405
TSD County:	Yolo
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Tons:	0.14
Facility County:	Yolo

Gepaid:	CAL000020057
Contact:	FEDERAL GOVERNMENT
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1325 J ST
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Yolo
TSD EPA ID:	CAD108040858

Map ID	Site	Database(s)	EPA ID Number

US ARMY CORPS OF ENGINEERS (Continued) **S103993634**

TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Not reported
Tons: .0708
Facility County: Yolo

Gepaid: CAL000020057
Contact: FEDERAL GOVERNMENT
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1325 J ST
Mailing City,St,Zip: SACRAMENTO, CA 958140000
Gen County: Yolo
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Recycler
Tons: .0208
Facility County: Yolo

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

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15 **BRYTE YARD** **HIST UST** **U001612319**
1645 RIVERBANK RD **N/A**
BRYTE, CA 95605

HIST UST:
Region: STATE
Facility ID: 00000064542
Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00001000
Facility Type: Other
Other Type: GOV'T
Total Tanks: 0001
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: RON MASON
Telephone: 9165512564
Owner Name: U.S. ARMY CORPS OF ENGINEERS
Owner Address: 650 CAPITOL MALL
Owner City,St,Zip: SACRAMENTO, CA 95814

Map ID	Site	Database(s)	EPA ID Number
15	**BRYTE SEND STORAGE** **1645 RIVERBANK RD** **BRYTE, CA**	**LUST** **Cortese**	**S104163435** **N/A**

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	Not reported
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	Other Cause
Leak Source:	Piping
Global Id:	T0611300059
Stop Date:	1989-04-14 00:00:00
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	1989-08-09 00:00:00
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1990-07-01 00:00:00
Discover Date:	1989-04-14 00:00:00
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1989-06-13 00:00:00
Review Date:	1996-04-09 00:00:00
Enter Date:	1989-08-14 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Case Closed
Chemical:	Regular Gasoline
Contact Person:	Not reported
Responsible Party:	US ARMY CORPS ENG
RP Address:	1645 RIVERBANK RAOD, BRYTE, CA 95605
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff:	DFS
Staff Initials:	BRU
Lead Agency:	Local Agency
Local Agency:	57000
Hydr Basin #:	SACRAMENTO VALLEY (5
Beneficial:	Not reported
Priority:	3
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	Not reported
Case Number:	570087

Map ID	Site	Database(s)	EPA ID Number

BRYTE SEND STORAGE (Continued) **S104163435**

Qty Leaked: 1000
Abate Method: Not reported
Operator: U.S. ARMY
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570087
Staff Initials: DFS
Substance: REGULR GASOLINE
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 1645 RIVERBANK RD

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15 **US ARMY CORP OF ENGINEERS** **HAZNET** **S104580707**
1645 RIVERBANK RD **N/A**
WEST SACRAMENTO, CA 95605

HAZNET:
Gepaid: CAL000175668
Contact: US ARMY CORP OF ENGINEERS
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1645 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Liquids with mercury > 20 mg/l
Disposal Method: Transfer Station
Tons: .0100
Facility County: Yolo

Gepaid: CAL000175668
Contact: MONICA EICHLER
Telephone: 9165575318
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1645 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAD008252405
TSD County: Yolo
Waste Category: Latex waste
Disposal Method: Recycler

Map ID	Site	Database(s)	EPA ID Number

US ARMY CORP OF ENGINEERS (Continued) **S104580707**

Tons: 0.01
Facility County: Yolo

Gepaid: CAL000175668
Contact: MONICA EICHLER
Telephone: 9165575318
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1645 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAD008252405
TSD County: Yolo
Waste Category: Off-specification, aged, or surplus organics
Disposal Method: Recycler
Tons: 0.14
Facility County: Yolo

Gepaid: CAL000175668
Contact: MONICA EICHLER
Telephone: 9165575318
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1645 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Laboratory waste chemicals
Disposal Method: Recycler
Tons: 0.01
Facility County: Not reported

Gepaid: CAL000175668
Contact: US ARMY CORP OF ENGINEERS
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1645 RIVERBANK RD
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
Disposal Method: Recycler
Tons: 0.0834
Facility County: Yolo

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

Map ID	Site	Database(s)	EPA ID Number
17	**TANDY, GERTRUDE (TRUST)** **613 YOLO ST** **ESPARTO, CA 95627**	**UST**	**U004004365** **N/A**

UST:

Region:	Yolo
Facility ID:	FA0000582
Owner ID:	OW0000472
Owner Name:	TANDY GERTRUDE (TRUST)
Owner Address:	506 WOODLAND AVE
Owner City,St,Zip:	WOODLAND, CA 95695
Business Type:	99 - OTHER
Business ID:	09 - UNKNOWN
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	95
Tank Description:	UNKNOWN
Tank Contents:	003
Tank Capacity:	350
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000582
Tank Number:	2
Tank Type:	95
Tank Description:	UNKNOWN
Tank Contents:	003
Tank Capacity:	350
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000582

Map ID	Site	Database(s)	EPA ID Number
18	**FARALLON BOATS** **504 HARBOR BOULEVARD** **WEST SACRAMENTO, CA 95605**	**FINDS**	**1008244693** **110021334705**

FINDS:
Other Pertinent Environmental Activity Identified at Site

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

Map ID	Site	Database(s)	EPA ID Number
21	**IDEXX VETERINARY SVC** **2825 KOVR DRIVE** **WEST SACRAMENTO, CA 95605**	**FINDS** **HAZNET** **RCRA-LQG**	**1001195273** **CAR000018382**

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

The NEI (National Emissions Inventory) database contains information

Map ID	Site	Database(s)	EPA ID Number

IDEXX VETERINARY SVC (Continued) **1001195273**

on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid:	CAR000018382
Contact:	IDEXX VETERINARY SVCS INC
Telephone:	9163724200
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2825 KOVR DR
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956051600
Gen County:	Yolo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Transfer Station
Tons:	.3375
Facility County:	Yolo

Gepaid:	CAR000018382
Contact:	IDEXX VETERINARY SVCS INC
Telephone:	9163724200
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2825 KOVR DR
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956051600
Gen County:	Yolo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Disposal, Other
Tons:	14.7824
Facility County:	Yolo

Gepaid:	CAR000018382
Contact:	IDEXX VETERINARY SVCS INC
Telephone:	9163724200
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2825 KOVR DR
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956051600
Gen County:	Yolo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Liquids with mercury > 20 mg/l
Disposal Method:	Transfer Station
Tons:	.0050
Facility County:	Yolo

Map ID	Site	Database(s)	EPA ID Number

IDEXX VETERINARY SVC (Continued) **1001195273**

Gepaid: CAR000018382
Contact: IDEXX VETERINARY SVCS INC
Telephone: 9163724200
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2825 KOVR DR
Mailing City,St,Zip: WEST SACRAMENTO, CA 956051600
Gen County: Yolo
TSD EPA ID: CAD059494310
TSD County: Santa Clara
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 1.7775
Facility County: Yolo

Gepaid: CAR000018382
Contact: IDEXX VETERINARY SVCS INC
Telephone: 9163724200
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2825 KOVR DR
Mailing City,St,Zip: WEST SACRAMENTO, CA 956051600
Gen County: Yolo
TSD EPA ID: CAD059494310
TSD County: Santa Clara
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Disposal, Other
Tons: 3.4402
Facility County: Yolo

Click this hyperlink while viewing on your computer to access
62 additional CA_HAZNET: record(s) in the EDR Site Report.

RCRAInfo:
Owner: LEWIS KNIGHT
EPA ID: CAR000018382

Contact: KELLEY ROGGIO
(916) 267-2465

Classification: Large Quantity Generator
TSDF Activities: Not reported

BIENNIAL REPORTS:
Last Biennial Reporting Year: 2005

Waste	Quantity (Lbs)
D001	81734.78

Violation Status: Violations exist

Regulation Violated: Not reported
Area of Violation: GENERATOR-GENERAL REQUIREMENTS
Date Violation Determined: 07/30/2004
Actual Date Achieved Compliance: 07/30/2004

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 07/30/2004
Penalty Type: Not reported

Map ID	Site	Database(s)	EPA ID Number

IDEXX VETERINARY SVC (Continued) **1001195273**

There are 1 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-GENERAL REQUIREMENTS	20040730

21 **MCI TELECOMMUNICATION CORPORATION** UP TO 1997 AR** **HAZNET** **S102792639**
2820 KOVR DR **SLIC** **N/A**
WEST SACRAMENTO, CA **EMI**

HAZNET:

Gepaid:	CAC000766792
Contact:	MCI TELECOMMUNICATIONS
Telephone:	9729185671
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2820 KOVR DR
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956050000
Gen County:	Yolo
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	.1250
Facility County:	Yolo

Gepaid:	CAC000721440
Contact:	CELESTE HASELTINE
Telephone:	2149185143
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2820 KOVR DRIVE
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956050000
Gen County:	Yolo
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	0.11
Facility County:	Not reported

Gepaid:	CAC000721440
Contact:	KEVIN MCGRATH/CONTACT
Telephone:	9163734601
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2820 KOVR DRIVE
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956050000
Gen County:	Yolo
TSD EPA ID:	CAD044003556
TSD County:	Yolo
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Tons:	11.2590
Facility County:	Yolo

Gepaid:	CAC000721440
Contact:	KEVIN MCGRATH/CONTACT
Telephone:	9163734601

Map ID	Site	Database(s)	EPA ID Number

MCI TELECOMMUNICATION CORPORATION UP TO 1997 AR (Continued)** **S102792639**

Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2820 KOVR DRIVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Disposal, Other
Tons: 6.0000
Facility County: Yolo

Gepaid: CAC000721440
Contact: KEVIN MCGRATH/CONTACT
Telephone: 9163734601
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2820 KOVR DRIVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956050000
Gen County: Yolo
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture Waste
Disposal Method: Recycler
Tons: .0625
Facility County: Yolo

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

SLIC:
Region: 5
Facility Status: Closed by County
Unit: Facility is a Spill or site
Pollutant: TPH as hydraulic oil
Lead Agency: Not reported
Date Filed: 02/13/97
Report Date: 12/27/96
Date Added: Not reported
Date Closed: Not reported

EMI:
Year: 1996
Carbon Monoxide Emissions Tons/Yr: 57
Air Basin: SV
Facility ID: 509
Air District Name: YS
SIC Code: 4813
Air District Name: YOLO/SOLANO AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 1
SOX - Oxides of Sulphur Tons/Yr: 0

Map ID	Site	Database(s)	EPA ID Number

MCI TELECOMMUNICATION CORPORATION UP TO 1997 AR (Continued)** **S102792639**

Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1997
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	509
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1998
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	509
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1998
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	845
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1999
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV

Map ID	Site	Database(s)	EPA ID Number

MCI TELECOMMUNICATION CORPORATION UP TO 1997 AR (Continued)** **S102792639**

Facility ID:	845
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	509
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	509
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	845
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported

Map ID	Site	Database(s)	EPA ID Number

MCI TELECOMMUNICATION CORPORATION UP TO 1997 AR (Continued)** **S102792639**

Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	509
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	845
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	509
Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

MCI TELECOMMUNICATION CORPORATION UP TO 1997 AR (Continued)** **S102792639**

Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2002
Carbon Monoxide Emissions Tons/Yr: 57
Air Basin: SV
Facility ID: 845
Air District Name: YS
SIC Code: 4813
Air District Name: YOLO/SOLANO AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2003
Carbon Monoxide Emissions Tons/Yr: 57
Air Basin: SV
Facility ID: 509
Air District Name: YS
SIC Code: 4813
Air District Name: YOLO/SOLANO AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2004
Carbon Monoxide Emissions Tons/Yr: 57
Air Basin: SV
Facility ID: 509
Air District Name: YS
SIC Code: 4813
Air District Name: YOLO/SOLANO AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0.2
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2005
Carbon Monoxide Emissions Tons/Yr: 57
Air Basin: SV
Facility ID: 509

Map ID	Site	Database(s)	EPA ID Number

MCI TELECOMMUNICATION CORPORATION UP TO 1997 AR (Continued)** **S102792639**

Air District Name:	YS
SIC Code:	4813
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	.04
NOX - Oxides of Nitrogen Tons/Yr:	.59
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

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21 **VERIZON BUSINESS** **UST** **U003785730**
2820 KOVR DR **N/A**
WEST SACRAMENTO, CA 95605

UST:

Region:	STATE
Local Agency:	57000
Facility ID:	FA0000564

UST:

Region:	Yolo
Facility ID:	FA0000564
Owner ID:	OW0004325
Owner Name:	MCI CORP
Owner Address:	2400 N GLENVILLE DR
Owner City,St,Zip:	RICHARDSON, TX 75082
Business Type:	99 - OTHER
Business ID:	09 - UNKNOWN
Current Status:	Active
Program/Element:	2300 - GEN UNDERGROUND STORAGE TANK
Tank Number:	1
Tank Type:	motor vehicle
Tank Description:	DOUBLE WALLED
Tank Contents:	003
Tank Capacity:	10,000
Leak Detection #:	Not reported
Tank Status:	active
LEA ID:	Not reported
Surcharge Year:	06/01/01
Inv Gen:	1996000564
Tank Number:	2
Tank Type:	motor vehicle
Tank Description:	DOUBLE WALLED
Tank Contents:	003
Tank Capacity:	10,000
Leak Detection #:	Not reported
Tank Status:	active
LEA ID:	Not reported
Surcharge Year:	06/01/01
Inv Gen:	1996000564
Tank Number:	3
Tank Type:	motor vehicle
Tank Description:	DOUBLE WALLED
Tank Contents:	003

Map ID	Site	Database(s)	EPA ID Number

VERIZON BUSINESS (Continued) **U003785730**

Tank Capacity: 10,000
Leak Detection #: Not reported
Tank Status: active
LEA ID: Not reported
Surcharge Year: 06/01/01
Inv Gen: 1996000564

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22 **WAL-MART SUPERCENTER #3652** **AST** **A100302686**
755 RIVER POINT DR **N/A**
WEST SACRAMENTO, CA 95605

AST:
Owner: WAL-MART HOME OFFICE
Total Gallons: 1840

---

24 **HOME DEPOT** **SLIC** **S107869619**
700 RIVERPOINT CIRCLE **N/A**
WEST SACRAMENTO, CA

SLIC:
Region: STATE
Global Id: SL0611367066
Assigned Name: SLICSITE
Lead Agency Contact: DUNCAN A. AUSTIN
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: Not reported
Responsible Party: Not reported
Recent Dtw: Not reported
Substance Released: 7440382
Facility Status: **Case Open**

---

25 **RIVER POINT BUSINESS PARK** **WMUDS/SWAT** **S103442173**
HARBOR BLVD/REED AVE **N/A**
WEST SACRAMENTO CA, CA 95691

WMUDS/SWAT:
Edit Date: Not reported
Complexity: Not reported
Primary Waste: Stormwater Runoff
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Base Meridian: Not reported
NPID: Not reported
Tonnage: 0
Regional Board ID: Not reported
Municipal Solid Waste: False
Superorder: False
Open To Public: False

Map ID	Site	Database(s)	EPA ID Number

RIVER POINT BUSINESS PARK (Continued) **S103442173**

Waste List:	False
Agency Type:	Private
Agency Name:	BEDFORD PROPERTIES, INC.
Agency Department:	Not reported
Agency Address:	3468 MT DIABLO BLVD, STE. B140
Agency City,St,Zip:	LAFAYETTE CA 94549
Agency Contact:	JUSTIN ANTHONY KENNEDY
Agency Telephone:	4152838262
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	Not reported
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	5S
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	6512
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	False
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	Not reported
Threat to Water Quality:	Not reported
Sub Chapter 15:	True
Regional Board Project Officer:	JDM
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	No
Waste Discharge Requirements:	Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire.
Self-Monitoring Rept. Frequency:	Quarterly Submittal
Waste Discharge System ID:	5A572015N01
Solid Waste Information ID:	Not reported

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33 **B O R INDUSTRIES, INC** **ENVIROSTOR** **S100351744**
2505 RICE AVENUE **N/A**
WEST SACRAMENTO, CA 95691

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported

Map ID	Site	Database(s)	EPA ID Number

B O R INDUSTRIES, INC (Continued) **S100351744**

Division Branch:	Central California
Facility ID:	57420006
Site Code:	100014
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Inactive - Needs Evaluation
Status Date:	1995-09-26 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5863888888889
Longitude:	-121.541666666667
Alias Name:	BOR INDUSTRIES 57420006 CAD102827599 100014
Alias Type:	Project Code (Site Code) HWIS Identification Code Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Site Screening completed. A 1986 PA recommended soil sampl- ing at drum storage sites on the property. During a March 1984 inspection, the Dept. of Health Services observed one hundred drums, some of which were leaking and in very poor condition. BSITE SCREENING DONEO R was cited for Health and Safety Code violations for illegal discharge of wastes to a drainage canal that runs along the west end of the property. Soil sampling revealed zinc at levels up to 6,800 ug/g at an outfall pipe that drains into the westside canal. In January 1986 two underground storage tanks were removed under the supervision of Yolo County Dept. of Health. One tank stored petroleum products, including solvents, and the other smaller tank stored waste water. No leaks were detected from an inspection of the tanks and no contamin- ation was detected from soil samples taken from the tank excavation pits. Four other tanks have been removed since 1986. DTSC files contain no dates or removal sampling information. A Preliminary Endangerment Assessment (PEA) is required due to past waste discharges, drum leakage and high concentrations of zinc found in the drainage pipe.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1995-09-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-02-10 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

B O R INDUSTRIES, INC (Continued) **S100351744**

Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

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33 **B.O.R. INDUSTRIES** **CA BOND EXP. PLAN** **S100833345**
2505 RICE AVENUE **N/A**
WEST SACRAMENTO, CA 95691

CA BOND EXP. PLAN:

Reponsible Party:	DETAILED SITE EXPENDITURE PLAN
Project Revenue Source Company:	Not reported
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Not reported
Project Revenue Source Desc:	The identified responsible party appears to be a small business with limited resources. It appears at this time that it will be necessary to utilize Bond funds to remediate this site. If Bond funds are expended, DHAS will undertake appropriate cost recovery action. This site has not been identified as an NPL site, nor does it appear to be a likely NPL candidate in the future. Therefore, it appears unlikely that federal funds are a viable source of revenue for this site.
Site Description:	B.O.R. Industries (B.O.R.) is currently registered as a hazardous waste transporter and used oil transfer facility. The facility on this two acre site has operated since approximately 1972. The previous owner operated a similar business at the same location. The current owners are Norman Bennett and Steven Bennett.
Hazardous Waste Desc:	Heavy metals are the contaminants of greatest concern. Areas of concern include: underground tanks, soils underlying cracked asphalt pavement and soils near the discharge end of the outfall pipe in an adjacent ditch. Soil samples taken in the ditch on March, 29, 1984, indicated elevated levels of lead, zinc and copper.
Threat To Public Health & Env:	Because of the high water table in this area (25 feet from the surface) and the direct discharge of waste to surface soils, ground water degradation is the major concern. The immediate area depends on ground water for drinking and irrigation uses. This includes the Cities of Bryte, Broderick and West Sacramento. Also of concern is the proximity of the site to an irrigation canal. The site is fenced and locked when unattended.
Site Activity Status:	In August 1984, the Yolo County Municipal Court found B.O.R. in violation of the Health and Safety Code for recycling used oil and storage of used oil and other hazardous wastes. A preliminary assessment has been completed. DHS is projecting to use State Bond funds to perform the remedial investigations and subsequent work.

Map ID	Site	Database(s)	EPA ID Number
33	**PETROLEUM TANK LINE** **2600 RICE AVE** **WEST SACRAMENTO, CA 95691**	**RCRA-SQG** **FINDS** **HAZNET** **LUST** **Cortese** **HIST UST** **ENVIROSTOR**	**1000367266** **CAD009240185**

RCRAInfo:

Owner: NOT REQUIRED
(415) 555-1212
EPA ID: CAD009240185

Contact: ENVIRONMENTAL MANAGER
(916) 372-5211

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:

Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid: CAD009240185
Contact: CHARLES H MOORE JR
Telephone: 9163715211
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 RICE AVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912348
Gen County: Yolo
TSD EPA ID: CAD044003556
TSD County: Yolo
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: 0.6672
Facility County: Yolo

Gepaid: CAD009240185
Contact: CHARLES H MOORE JR
Telephone: 9163715211
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 RICE AVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912348
Gen County: Yolo
TSD EPA ID: CAD980887418
TSD County: 1

Map ID	Site	Database(s)	EPA ID Number

PETROLEUM TANK LINE (Continued) **1000367266**

Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Tons: 4.17
Facility County: Yolo

Gepaid: CAD009240185
Contact: CHARLES H MOORE JR
Telephone: 9163715211
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 RICE AVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912348
Gen County: Yolo
TSD EPA ID: CAD980887418
TSD County: 1
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 3.753
Facility County: Yolo

Gepaid: CAD009240185
Contact: CHARLES H MOORE JR
Telephone: 9163715211
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 RICE AVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912348
Gen County: Yolo
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other organic solids
Disposal Method: Disposal, Land Fill
Tons: 0.3
Facility County: Yolo

Gepaid: CAD009240185
Contact: CHARLES H MOORE JR
Telephone: 9163715211
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 2600 RICE AVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 956912348
Gen County: Yolo
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 4.17
Facility County: Yolo

Click this hyperlink while viewing on your computer to access
27 additional CA_HAZNET: record(s) in the EDR Site Report.

LUST:
Region: STATE
Case Type: Drinking Water Aquifer affected
Cross Street: GLIDE

Map ID	Site	Database(s)	EPA ID Number

PETROLEUM TANK LINE (Continued) **1000367266**

Enf Type:	None Taken
Funding:	Not reported
How Discovered:	OM
How Stopped:	Not reported
Leak Cause:	Corrosion
Leak Source:	Piping
Global Id:	T0611300202
Stop Date:	Not reported
Confirm Leak:	1995-08-18 00:00:00
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	2005-11-29 00:00:00
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	Not reported
Discover Date:	1995-08-18 00:00:00
Enforcement Dt:	2000-11-09 00:00:00
Release Date:	1989-08-11 00:00:00
Review Date:	1998-01-20 00:00:00
Enter Date:	1995-10-03 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Pollution Characterization
Chemical:	Diesel
Contact Person:	Not reported
Responsible Party:	PETROLEUM TANK LINE
RP Address:	2600 RICE AVE, WEST SACRAMENTO, CA 95691
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE and MTBE detected
Staff:	DFS
Staff Initials:	BRU
Lead Agency:	Regional Board
Local Agency:	57000
Hydr Basin #:	SACRAMENTO VALLEY (5
Beneficial:	Not reported
Priority:	2
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	Not reported
Case Number:	570255
Qty Leaked:	Not reported
Abate Method:	Not reported
Operator:	Not reported
Water System Name:	Not reported
Well Name:	Not reported
Distance To Lust:	0

Map ID	Site	Database(s)	EPA ID Number

PETROLEUM TANK LINE (Continued) **1000367266**

Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

Cortese:
Region: CORTESE
Facility Addr2: 2600 RICE AVE

Region: CORTESE
Facility Addr2: Not reported

HIST UST:
Region: STATE
Facility ID: 00000004230
Tank Num: 001
Container Num: 5
Year Installed: 1974
Tank Capacity: 00002000
Facility Type: Other
Other Type: Not reported
Total Tanks: 0005
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: 6 inches
Leak Detection: Visual
Contact Name: C.H. MOORE, JR.
Telephone: 9163715211
Owner Name: PETROLEUM TANK LINE
Owner Address: 2600 RICE AVENUE
Owner City,St,Zip: WEST SACRAMENTO, CA 95691

Region: STATE
Facility ID: 00000004230
Tank Num: 002
Container Num: 4
Year Installed: 1975
Tank Capacity: 00001000
Facility Type: Other
Other Type: Not reported
Total Tanks: 0005
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Visual
Contact Name: C.H. MOORE, JR.
Telephone: 9163715211
Owner Name: PETROLEUM TANK LINE
Owner Address: 2600 RICE AVENUE
Owner City,St,Zip: WEST SACRAMENTO, CA 95691

Region: STATE
Facility ID: 00000004230
Tank Num: 003
Container Num: 3
Year Installed: 1978
Tank Capacity: 00002000

Map ID	Site	Database(s)	EPA ID Number

PETROLEUM TANK LINE (Continued) **1000367266**

Facility Type: Other
Other Type: Not reported
Total Tanks: 0005
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: C.H. MOORE, JR.
Telephone: 9163715211
Owner Name: PETROLEUM TANK LINE
Owner Address: 2600 RICE AVENUE
Owner City,St,Zip: WEST SACRAMENTO, CA 95691

Region: STATE
Facility ID: 00000004230
Tank Num: 004
Container Num: 2
Year Installed: 1978
Tank Capacity: 00010000
Facility Type: Other
Other Type: Not reported
Total Tanks: 0005
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: C.H. MOORE, JR.
Telephone: 9163715211
Owner Name: PETROLEUM TANK LINE
Owner Address: 2600 RICE AVENUE
Owner City,St,Zip: WEST SACRAMENTO, CA 95691

Region: STATE
Facility ID: 00000004230
Tank Num: 005
Container Num: 1
Year Installed: 1974
Tank Capacity: 00010000
Facility Type: Other
Other Type: Not reported
Total Tanks: 0005
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: C.H. MOORE, JR.
Telephone: 9163715211
Owner Name: PETROLEUM TANK LINE
Owner Address: 2600 RICE AVENUE
Owner City,St,Zip: WEST SACRAMENTO, CA 95691

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

PETROLEUM TANK LINE (Continued) **1000367266**

Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57420001
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: RWQCB
Status Date:	1995-05-15 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5863888888889
Longitude:	-121.5425
Alias Name:	57420001
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	FACILITY IDENTIFIED: NOTED ON DRIVE BY - ACTIVE SITE. PETROLEUM WASTE & SPILLS ON GROUND FINAL STRATEGY SITE REFERRED: TO HAZARDOUS WASTE MANAGEMENT BRANCH, COUNTY HEALTH, AND REGIONAL WATER QUALITY CONTROL BOARD.SITE SCREENING DONE. NO CLEANUP DOCUMENTED.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1982-03-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-02-05 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10097, 20017
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED ORGANIC LIQUID MIXTURE
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number
36	**TOM'S HOUSE OF HYDRAULICS INC** **2904 DULUTH ST** **WEST SACRAMENTO, CA 95691**	**HAZNET** **ENVIROSTOR**	**S100351742** **N/A**

HAZNET:

Gepaid:	CAL000091261
Contact:	BONNA CONNER/VP
Telephone:	9163729692
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2904 DULUTH ST
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910000
Gen County:	Yolo
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Disposal, Land Fill
Tons:	Not reported
Facility County:	Not reported

Gepaid:	CAL000091261
Contact:	TOM'S HOUSE OF HYDRAULICS INC
Telephone:	9163729692
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2904 DULUTH ST
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910000
Gen County:	Yolo
TSD EPA ID:	CAT080011059
TSD County:	Los Angeles
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Not reported
Tons:	.1000
Facility County:	Yolo

Gepaid:	CAL000091261
Contact:	TOM'S HOUSE OF HYDRAULICS INC
Telephone:	9163729692
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	2904 DULUTH ST
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910000
Gen County:	Yolo
TSD EPA ID:	CAT080011059
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture Waste
Disposal Method:	Not reported
Tons:	.6880
Facility County:	Yolo

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned

Map ID	Site	Database(s)	EPA ID Number

TOM'S HOUSE OF HYDRAULICS INC (Continued) **S100351742**

Division Branch:	Central California
Facility ID:	57350002
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5852777777778
Longitude:	-121.5475
Alias Name:	57350002
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

---

37 **JAR BUILDING - GERLINGER MOTOR PARTS** **ENVIROSTOR** **S100183668**
3020 / 3040 DULUTH STREET **N/A**
WEST SACRAMENTO, CA 95691

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57370001
Site Code:	Not reported
Assembly:	Not reported
Senate:	Not reported

Map ID	Site	Database(s)	EPA ID Number

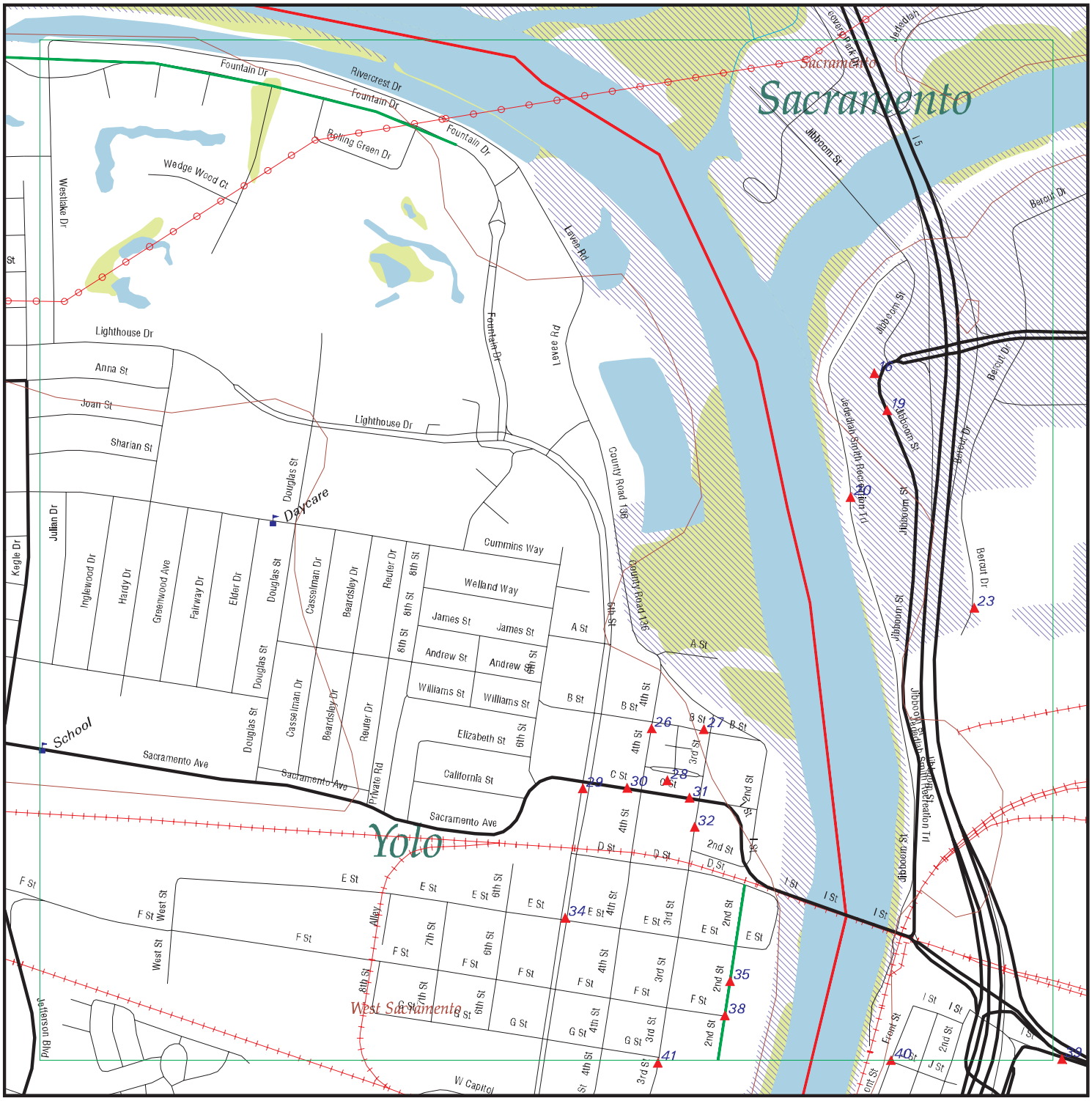
JAR BUILDING - GERLINGER MOTOR PARTS (Continued) **S100183668**

Special Program:	Not reported
Status:	Refer: RWQCB
Status Date:	1987-01-29 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	0
Longitude:	0
Alias Name:	57370001
	GERLINGER MOTOR PARTS
Alias Type:	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	FACILITY IDENTIFIED: OBSERVED ON DRIVE BYS - ACTIVE SITE. SLUDGES,LIQUIDS DISCHARGED TO STORM CANAL. FINAL STRATEGY REFERRED TO HAZARDOUS WASTE MANAGEMENT BRANCH, COUNTY HEALTH AND THE REGIONAL WATER QUALITY CONTROL BOARD.SITE SCREENING DONE. NO INFORMATION IN FILE.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1982-03-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-01-29 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10197
Potenital Description:	* UNSPECIFIED SLUDGE WASTE
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

FOCUS MAP 8 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
W SACRAMENTO	U004004351	SMISER FREIGHT	832 F ST	95691	UST
W SACRAMENTO	U003850805	CARGILL INC	STONE BLVD-PORT OF SACRAMENTO	95691	UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	1007370116	CALTRANS WORKERS MEMORIAL BRIDGE	INTERSTATE 80 AT POSTMILE 11.1	95691	RCRA-SQG, HAZNET
WEST SACRAMENTO	U001614227	PORT OF SACRAMENTO-TERMINAL	BASE OF HARBOR BLVD.	95691	HIST UST
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	U003850915	P G & E - WINCHESTER LK	BURROWS/W OF JEFFERSON	95691	UST
WEST SACRAMENTO	1009311588	WEST SACRAMENTO DRAINAGE DITCH	EASEMENT AT END OF PARCELS ALONG MAPLE	95691	US BROWNFIELDS
WEST SACRAMENTO	S101595147	ISLANDS MARINA	1546 HOLLAND RD	95691	CA FID UST, SWEEPS UST
WEST SACRAMENTO	U004003829	NOR CAL ASSOC/KAUFMAN MANIKAS	JEFFERSON AT MARSHALL	95691	UST
WEST SACRAMENTO	U004004463	WILLOW POINT RANCH	JEFFERSON BLVD & WILLOW POINT	95691	UST
WEST SACRAMENTO	U003850876	KEEBLER DISTRIBUTION CENTER	LOT RIVERPOINT CENTRE 28	95691	UST
WEST SACRAMENTO	S101482951	TOMLIN'S SUNSHINE CLEANERS	612 MICHIGAN BLVD	95691	ENVIROSTOR
WEST SACRAMENTO	S105694082	FOOD & LIQUOR #119 (KAYO)	731 POPLAR ST (AKA: 1840 WEST CAPITOL)	95691	LUST
WEST SACRAMENTO	U001614172	CARGILL INC.	PORT OF SACRAMENTO-STONE BLVD	95691	HIST UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST
WEST SACRAMENTO	S106127651	WASHINGTON UNIFIED SCHOOL DISTRICT	931 WESTACRE ROAD	95691	LUST

Focus Map 9



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 9 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	1
NPL LIENS	0
CERCLIS	1
CERC-NFRAP	1
CORRACTS	1
RCRA TSD	1
RCRA Lg. Quan. Gen.	1
RCRA Sm. Quan. Gen.	3
ERNS	0
HMIRS	0
US ENG CONTROLS	1
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	2
CONSENT	1
ROD	1
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	5
RAATS	1
STATE AND LOCAL RECORDS	
Hist Cal-Sites	6
CA Bond Exp. Plan	4
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	1

FOCUS MAP 9 SUMMARY

Database	Total Plotted
Cortese	6
SWRCY	0
LUST	7
CA FID UST	0
SLIC	3
UST	9
HIST UST	3
AST	0
LIENS	0
SWEEPS UST	0
CHMIRS	2
Notify 65	1
DEED	5
VCP	2
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	7
HAZNET	3
EMI	2
HAULERS	0
ENVIROSTOR	11
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	2

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number
16	**ARCO SERVICE STATION NO. 6168** **222 JIBBOOM STREET** **SACRAMENTO, CA 92324**	**Notify 65**	**S100179023** **N/A**

Notify 65:
- Date Reported: Not reported
- Staff Initials: Not reported
- Board File Number: Not reported
- Facility Type: Not reported
- Discharge Date: Not reported
- Incident Description: 92324

Map ID	Site	Database(s)	EPA ID Number
19	**JIBBOOM JUNKYARD SUPERFUND SITE** **240 JIBBOOM ST** **SACRAMENTO, CA 95814**	**CERCLIS** **RCRA-SQG** **FINDS** **CONSENT** **Delisted NPL** **ROD** **US ENG CONTROLS**	**1000164253** **CAD980737613**

CERCLIS:
- Site ID: 0902040
- Federal Facility: Not a Federal Facility
- NPL Status: Deleted from the Final NPL
- Non NPL Status: Not reported

CERCLIS Site Contact Name(s):
- Contact Name: Richard Martyn
  Contact Tel: (415) 972-3038
  Contact Title: On-Scene Coordinator (OSC)
- Contact Name: Jere Johnson
  Contact Tel: (415) 972-3094
  Contact Title: Site Assessment Manager (SAM)
- Contact Name: Kevin Mayer
  Contact Tel: (415) 972-3176
  Contact Title: Remedial Project Manager (RPM)
- Contact Name: Lauren Berkman
  Contact Tel: (415) 972-2392
  Contact Title: Community Involvement Coordinator

CERCLIS Site Alias Name(s):
- Alias Name: CITY OF SACRAMENTO DUMP
  Alias Address: Not reported
  CA
- Alias Name: ASSOCIATED METALS
  Alias Address: Not reported
  CA
- Alias Name: PG&E POWER PLANT
  Alias Address: Not reported
  CA
- Alias Name: JIBBOOM JUNKYARD
  Alias Address: 240 - 260 JIBBOOM ST
  SACRAMENTO, CA 95814

Site Description: JIBBOOM JUNKYARD, SACRAMENTO, CA. IS ON THE EAST BANK OF THESACRAMENTO RIVER, ADJACENT TO THE CITY DRINKING WATER INTAKE. THE SITE WAS OPERATED AS A SALVAGE YARD FROM 1950 - 1965.

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD SUPERFUND SITE (Continued) **1000164253**

CERCLIS Assessment History:

Action:	DISCOVERY
Date Started:	Not reported
Date Completed:	04/01/1981
Priority Level:	Not reported
Action:	PRELIMINARY ASSESSMENT
Date Started:	Not reported
Date Completed:	08/01/1982
Priority Level:	High
Action:	SITE INSPECTION
Date Started:	04/01/1981
Date Completed:	12/01/1982
Priority Level:	High
Action:	HAZARD RANKING SYSTEM PACKAGE
Date Started:	Not reported
Date Completed:	12/01/1982
Priority Level:	Not reported
Action:	PROPOSAL TO NATIONAL PRIORITIES LIST
Date Started:	Not reported
Date Completed:	12/30/1982
Priority Level:	Not reported
Action:	FINAL LISTING ON NATIONAL PRIORITIES LIST
Date Started:	Not reported
Date Completed:	09/08/1983
Priority Level:	Not reported
Action:	FEASIBILITY STUDY
Date Started:	06/13/1984
Date Completed:	05/09/1985
Priority Level:	Not reported
Action:	RECORD OF DECISION
Date Started:	Not reported
Date Completed:	05/09/1985
Priority Level:	Final Remedy Selected at Site
Action:	REMEDIAL INVESTIGATION
Date Started:	06/13/1984
Date Completed:	05/09/1985
Priority Level:	Not reported
Action:	REMEDIAL DESIGN
Date Started:	05/23/1985
Date Completed:	01/02/1986
Priority Level:	Not reported
Action:	PRE-DESIGN ASSISTANCE
Date Started:	07/25/1985
Date Completed:	09/01/1986
Priority Level:	Not reported
Action:	REMEDIAL ACTION

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD SUPERFUND SITE (Continued) **1000164253**

Date Started: 07/01/1985
Date Completed: 07/01/1987
Priority Level: Not reported

Action: COMMUNITY INVOLVEMENT
Date Started: 06/13/1984
Date Completed: 07/01/1987
Priority Level: Not reported

Action: CLOSE OUT REPORT
Date Started: Not reported
Date Completed: 03/31/1988
Priority Level: Not reported

Action: REMOVAL ASSESSMENT
Date Started: 09/05/1990
Date Completed: 09/05/1990
Priority Level: Not reported

Action: DELETION FROM NATIONAL PRIORITIES LIST
Date Started: 05/24/1989
Date Completed: 09/10/1991
Priority Level: Not reported

Action: Special Notice Issued
Date Started: Not reported
Date Completed: 05/28/1992
Priority Level: Not reported

Action: REMOVAL ASSESSMENT
Date Started: Not reported
Date Completed: 12/10/1992
Priority Level: Not reported

Action: Notice Letters Issued
Date Started: Not reported
Date Completed: 02/05/1993
Priority Level: Not reported

Action: Lodged By DOJ
Date Started: Not reported
Date Completed: 02/10/1995
Priority Level: Not reported

Action: SECTION 107 LITIGATION
Date Started: 06/25/1992
Date Completed: 03/21/1995
Priority Level: Not reported

Action: CONSENT DECREE
Date Started: 06/25/1992
Date Completed: 03/21/1995
Priority Level: Not reported

Action: FIVE-YEAR REVIEW
Date Started: 01/20/2007
Date Completed: Not reported

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD SUPERFUND SITE (Continued) **1000164253**

Priority Level: Not reported

RCRAInfo:
Owner: NOT REQUIRED
(415) 555-1212
EPA ID: CAD980737613

Contact: Not reported

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and its Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

CONSENT:
Full-text of a consent decree on this site issued by a United States District Court is available from EDR.

Delisted NPL:
EPA ID: CAD980737613
Site ID: 0902040
EPA Region: 09
Federal: No
Deleted Date: 09/10/1991

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD SUPERFUND SITE (Continued) **1000164253**

Category Details:

NPL Status:	Deleted from the Final NPL
Category Description:	Depth To Aquifer-> 25 And <= 50 Feet
Category Value:	35

NPL Status:	Deleted from the Final NPL
Category Description:	Distance To Nearest Population-> 1/4 And <= 1/2 Mile
Category Value:	1500

Site Details:

Site Name:	JIBBOOM JUNKYARD
Site Status:	Deleted
Status Date:	09/10/91
Site City:	SACRAMENTO
Site State:	CA
Federal Site:	Not a Federal Facility
HRS Score:	28.94
GW Score:	8.48
SW Score:	49.34
Air Score:	Not reported
Soil Score:	Not reported
DC Score:	62.50
FE Score:	Not reported

Substance Details:

NPL Status:	Deleted from the Final NPL
Substance ID:	Not reported
Substance:	Not reported
CAS #:	Not reported
Pathway:	Not reported
Scoring:	Not reported

NPL Status:	Deleted from the Final NPL
Substance ID:	A046
Substance:	POLYCHLORINATED BIPHENYLS
CAS #:	1336-36-3
Pathway:	GROUND WATER PATHWAY
Scoring:	3

NPL Status:	Deleted from the Final NPL
Substance ID:	A046
Substance:	POLYCHLORINATED BIPHENYLS
CAS #:	1336-36-3
Pathway:	SURFACE WATER PATHWAY
Scoring:	3

NPL Status:	Deleted from the Final NPL
Substance ID:	C178
Substance:	COPPER AND COMPOUNDS
CAS #:	Not reported
Pathway:	NO PATHWAY INDICATED
Scoring:	1

NPL Status:	Deleted from the Final NPL
Substance ID:	C247
Substance:	ZINC AND COMPOUNDS

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD SUPERFUND SITE (Continued) **1000164253**

CAS #: Not reported
Pathway: NO PATHWAY INDICATED
Scoring: 1

NPL Status: Deleted from the Final NPL
Substance ID: D008
Substance: LEAD (PB)
CAS #: 7439-92-1
Pathway: NO PATHWAY INDICATED
Scoring: 1

NPL Status: Deleted from the Final NPL
Substance ID: W001
Substance: HEAVY METALS
CAS #: Not reported
Pathway: GROUND WATER PATHWAY
Scoring: 2

Summary Details:

Conditions at listing December 1982): The Jibboom Junkyard covers 9 acres in Sacramento, California, on the floodplain of the Sacramento River. A metal-salvaging business operated on the site. Among other things, the company dismantled transformers and possibly asbestos-lined boilers. The original si e of the site is unknown, but it may once have covered about 35 acres. Portions of the original site are now occupied by motels and/or are a part of Interstate Freeway I-5.Soil sampling by the State in 1981 detected levels of heavy metals exceeding the State s Total Threshold Limit Concentrations. There were also indications of PCB contamination. The soil is highly permeable, and the aquifer is 35 feet below thesurface. The city s drinking water is taken from the river at the northwest corner of the site. The river is also used for recreation and irrigation. Status July 1983): In April 1983, EPA collected soil samples, and in May 1983 the State fenced the site to limit public access. In June 1983, deep core samples were collected to further determine the extent and nature of contamination on the site.

Site Status Details:
NPL Status: Deleted
Proposed Date: 12/30/1982
Final Date: 09/08/1983
Deleted Date: 09/10/1991

Narratives Details:
NPL Name: JIBBOOM JUNKYARD
City: SACRAMENTO
State: CA

ROD:

Full-text of USEPA Record of Decision(s) is available from EDR.

US ENG CONTROLS:
EPA ID: CAD980737613
Site ID: 0902040
Name: JIBBOOM JUNKYARD
Address: 240 - 260 JIBBOOM ST

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD SUPERFUND SITE (Continued) **1000164253**

SACRAMENTO, CA 95814
EPA Region: 09
County: SACRAMENTO
Event Code: Not reported
Actual Date: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 05/09/1985
Planned Complet. date: 06/30/1985
Operable Unit: 01
Contaminated Media : Soil
Engineering Control: Disposal

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19 **JIBBOOM JUNKYARD** **ENVIROSTOR S101481773**
240-260 JIBBOOM STREET **HIST Cal-Sites N/A**
SACRAMENTO, CA 95814

ENVIROSTOR:
Site Type: Federal Superfund
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: DELISTED
Regulatory Agencies: SMBRP, US EPA
Lead Agency: US EPA
Program Manager: Not reported
Supervisor: Richard Hume
Division Branch: Central California
Facility ID: 34490023
Site Code: 100080
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-01-02 00:00:00
Restricted Use: NO
Funding: Joint State/Federal-Funded
Latitude: 38.597016
Longitude: -121.505555555556

Alias Name:	Alias Type:
CAD980737613	EPA Identification Number
A-1 METALS	Alternate Name
ASSOCIATED METALS	Alternate Name
34490023	Alternate Name
PG&E	Alternate Name
100080	Project Code (Site Code)
GREAT WESTERN POWER	Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: SITE SCREENING DONE
Completed Area Name: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD (Continued) **S101481773**

Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1990-01-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 1987-01-02 00:00:00
Confirmed: 30018,30013
Confirmed Description: Polychlorinated biphenyls (PCBs)
Confirmed Description: Lead
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: SOIL
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013, 30018
Potenital Description: Lead
Potenital Description: Polychlorinated biphenyls (PCBs)
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: METAL RECLAMATION

HISTORICAL CAL-SITES:
Facility ID: 34490023
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01021990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: NPJF
Type Name: NPL SITE, JOINT STATE/FEDERAL-FUNDED
NPL: Delisted
SIC Code: 49
SIC Name: ELECTRIC, GAS & SANITARY SERVICES
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: Not reported
Supervisor Responsible for Site: Not reported
Region Water Control Board: CV
Region Water Control Board Name: CENTRAL VALLEY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0

Map ID	Site	Database(s)	EPA ID Number

JIBBOOM JUNKYARD (Continued) **S101481773**

Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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19 **1X CAL DEPT OF WATER RESOURCES** **HAZNET** **S101481789**
240 JIBBOOM ST **SLIC** **N/A**
SACRAMENTO, CA 95000 **DEED**
VCP
Sacramento Co. ML
ENVIROSTOR

HAZNET:

Gepaid: CAC000904968
Contact: Not reported
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1020 9TH ST
Mailing City,St,Zip: SACRAMENTO, CA 958143515
Gen County: Sacramento
TSD EPA ID: CAD050806850
TSD County: Los Angeles
Waste Category: Aqueous solution with less than 10% total organic residues
Disposal Method: Transfer Station
Tons: 2.2500
Facility County: Sacramento

Gepaid: CAC000904968
Contact: Not reported
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1020 9TH ST
Mailing City,St,Zip: SACRAMENTO, CA 958143515
Gen County: Sacramento
TSD EPA ID: CAD050806850
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Transfer Station
Tons: .3500
Facility County: Sacramento

Gepaid: CAC000904968
Contact: Not reported
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1020 9TH ST
Mailing City,St,Zip: SACRAMENTO, CA 958143515
Gen County: Sacramento
TSD EPA ID: CAD050806850
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-ups
Disposal Method: Transfer Station

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

Tons: 2.4000
Facility County: Sacramento

Gepaid: CAC000904968
Contact: Not reported
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1020 9TH ST
Mailing City,St,Zip: SACRAMENTO, CA 958143515
Gen County: Sacramento
TSD EPA ID: CAD050806850
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-ups
Disposal Method: Treatment, Tank
Tons: .2500
Facility County: Sacramento

Click this hyperlink while viewing on your computer to access
-1 additional CA_HAZNET: record(s) in the EDR Site Report.

SLIC:
Region: STATE
Global Id: SLT5S1673207
Assigned Name: SLICSITE
Lead Agency Contact: CORI CONDON
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SLT5S167
Responsible Party: Not reported
Recent Dtw: Not reported
Substance Released: CR, 39516, MET
Facility Status: **Case Open**

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: VOLUNTARY CLEANUP
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 07/30/98

VCP:
Facility ID: 34490056
Site Type: Voluntary Cleanup
Site Type Detail: Voluntary Cleanup
Acres: 5
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: Not reported
Project Manager: STEVEN ROSS
Supervisor: Richard Hume
Division Branch: Central California
Site Code: 101763
Assembly: 09
Senate: 06
Special Programs Code: Voluntary Cleanup Program

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

Status:	Certified / Operation & Maintenance
Status Date:	1998-08-19 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Lat/Long:	38.593273 / -121.5055623
Alias Name:	101596 34490056 100258 101763
Alias Type:	Project Code (Site Code) Envirostor ID Number Project Code (Site Code) Project Code (Site Code)
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The RI/FS approved.An interagency agreement was completed for oversight of 5-year review of remedial action.A Voluntary Cleanup Agreement was executed on September 9, 2002 for oversight of installation of two underground utilities. The water main extension and sewer extension will be constructed above the existing protective earthen clay cap and in a manResponse activities included the capping of approx. 1.5 acres, including the building. Capping involved backfill to grade. Cap includes two feet of compacted clay and one foot of soil topcover.Agreement was signed for the continued operation and monitoring of the constructed soil cap remedy, groundwater monitoring system, and existing building and fence.DTSC signed an Interagency Agreement with DWR to complete the RI/FS, RAP and Certification of the site under the Voluntary Cleanup Program.The PEA was completed on April 30 ,1992. Further action is required to remove contaminated soils and to further investigate ground water.A CEQA Final Negative Declaration and Notice of Determination for the remedial action at this site dated Dec. 16, 1996 was completed.The site is certified complete. The remedial actions required by the 12/17/97 RAP include a clay and earth cap over lead contaminated soil, a deed restriction limiting property from unrestricted uses, an operations and maintenance plan, and agreemeApprox 0.75 acres have been capped and 2.5 acres released for reuse-commercial/industrial use only. Both the Remedial Action Plan (RAP) and Design (DES) have been approved.A deed restriction was recorded on a surveyed portion of the site prohibiting anyone in possession of the property from certain uses of the property including a residence, hospital, school, or day care center without a variance. Actions that wouldnt to maintain the remedy.ner protective of current and future public health and safety.interfere with the integrity of the hazardous waste containment unit or monitoring system are prohibited without a variance.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1996-12-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	2002-09-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operation & Maintenance Order/Agreement

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

Completed Date:	1998-08-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1998-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	1997-01-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1998-08-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1994-11-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	2005-10-18 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1995-06-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	1992-04-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1997-08-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1996-12-17 00:00:00
Confirmed:	30019,30013
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2008
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	REM, DAY, HOS, LUC, EX, NOWN, NDAM, SCH, RES
Management Required Desc:	Activities prohibited which disturb the remedy and monitoring systems without approval
Management Required Desc:	Day care center prohibited
Management Required Desc:	Hospital use prohibited
Management Required Desc:	Land Use covenant
Management Required Desc:	No Excavation or activities which disturb the soil at any depth without approval
Management Required Desc:	Notify after change of property owner
Management Required Desc:	Notify damages to remedy and monitoring systems upon discovery
Management Required Desc:	Public or private school for persons under 21 prohibited
Management Required Desc:	Residence use prohibited

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

Potential:	30013, 30019
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT, RECYCLING - SCRAP METAL

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Out of Business
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	51
Food Bill Code:	51
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	5
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	STEVEN ROSS
Supervisor:	Richard Hume
Division Branch:	Central California
Facility ID:	34490056
Site Code:	101763
Assembly:	09
Senate:	06
Special Program:	Voluntary Cleanup Program
Status:	Certified / Operation & Maintenance
Status Date:	1998-08-19 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.593273
Longitude:	-121.5055623
Alias Name:	101596
	34490056

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

	100258
	101763
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
	Project Code (Site Code)
	Project Code (Site Code)
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The RI/FS approved.An interagency agreement was completed for oversight of 5-year review of remedial action.A Voluntary Cleanup Agreement was executed on September 9, 2002 for oversight of installation of two underground utilities. The water main extension and sewer extension will be constructed above the existing protective earthen clay cap and in a manResponse activities included the capping of approx. 1.5 acres, including the building. Capping involved backfill to grade. Cap includes two feet of compacted clay and one foot of soil topcover.Agreement was signed for the continued operation and monitoring of the constructed soil cap remedy, groundwater monitoring system, and existing building and fence.DTSC signed an Interagency Agreement with DWR to complete the RI/FS, RAP and Certification of the site under the Voluntary Cleanup Program.The PEA was completed on April 30 ,1992. Further action is required to remove contaminated soils and to further investigate ground water.A CEQA Final Negative Declaration and Notice of Determination for the remedial action at this site dated Dec. 16, 1996 was completed.The site is certified complete. The remedial actions required by the 12/17/97 RAP include a clay and earth cap over lead contaminated soil, a deed restriction limiting property from unrestricted uses, an operations and maintenance plan, and agreemeApprox 0.75 acres have been capped and 2.5 acres released for reuse-commercial/industrial use only. Both the Remedial Action Plan (RAP) and Design (DES) have been approved.A deed restriction was recorded on a surveyed portion of the site prohibiting anyone in possession of the property from certain uses of the property including a residence, hospital, school, or day care center without a variance. Actions that wouldnt to maintain the remedy.ner protective of current and future public health and safety.interfere with the integrity of the hazardous waste containment unit or monitoring system are prohibited without a variance.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1996-12-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	2002-09-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operation & Maintenance Order/Agreement
Completed Date:	1998-08-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1998-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	1997-01-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1998-08-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1994-11-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	2005-10-18 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1995-06-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	1992-04-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1997-08-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1996-12-17 00:00:00
Confirmed:	30019,30013
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2008
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	REM, DAY, HOS, LUC, EX, NOWN, NDAM, SCH, RES
Management Required Desc:	Activities prohibited which disturb the remedy and monitoring systems without approval
Management Required Desc:	Day care center prohibited
Management Required Desc:	Hospital use prohibited
Management Required Desc:	Land Use covenant
Management Required Desc:	No Excavation or activities which disturb the soil at any depth without approval
Management Required Desc:	Notify after change of property owner
Management Required Desc:	Notify damages to remedy and monitoring systems upon discovery
Management Required Desc:	Public or private school for persons under 21 prohibited
Management Required Desc:	Residence use prohibited
Potential:	30013, 30019
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

1X CAL DEPT OF WATER RESOURCES (Continued) **S101481789**

Schedule Revised Date: Not reported
PastUse: MANUFACTURED GAS PLANT, RECYCLING - SCRAP METAL

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20 **JIBBOOM JUNKYARD** **CA BOND EXP. PLAN** **S100833429**
I-5 AND JIBBOOM STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	NPL SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Not reported
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Not reported
Project Revenue Source Desc:	The site is on the NPL and remedial actions are jointly funded by the State (10 percent) and federal (90 percent) governments. Bond monies were used to fund the State's share of the remedial action. The State and federal governments will seek cost recovery from any identified responsible parties.
Site Description:	This is a former junkyard/transformer salvage yard. It is on the Sacramento River south of the confluence with the American River.
Hazardous Waste Desc:	Polychlorinated biphenyls (PCBs), lead, copper, zinc and asbestos were found in soils at this site.
Threat To Public Health & Env:	People coming in direct contact with contaminated soils from the site were the population at risk. The routes of exposure were dermal, inhalation, and ingestion. Approximately 11,000 cubic yards of contaminated soil were removed from this 2.3 acre site. The depth of excavation ranged from 1 foot to 30 feet below grade.
Site Activity Status:	A draft feasibility study prepared under an EPA contract, was submitted in February, 1985. The final design analysis was completed in July, 1985. Remedial action was completed in May, 1987. The site is pending certification by EPA.

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23 **COMMUN, CENTER** **LUST** **S102428057**
111 BERCUT **Cortese** **N/A**
SACRAMENTO, CA 95814 **Sacramento Co. CS**

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	BANNON
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global Id:	T0606700058
Stop Date:	Not reported
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	1987-05-12 00:00:00
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1987-07-18 00:00:00
Discover Date:	1987-05-06 00:00:00
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1987-05-12 00:00:00

Map ID	Site	Database(s)	EPA ID Number

COMMUN, CENTER (Continued) **S102428057**

Review Date: 1993-03-05 00:00:00
Enter Date: 1987-08-13 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Waste Oil
Contact Person: Not reported
Responsible Party: SACRAMENTO CITY
RP Address: 5730 24TH STREET, SACRAMENTO, CA 95822
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: VJF
Staff Initials: HM
Lead Agency: Local Agency
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: R032
Case Number: 340081
Qty Leaked: Not reported
Abate Method: Not reported
Operator: CITY OF SACRAMENTO
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 340081
Staff Initials: VJF
Substance: WASTE OIL
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: Not reported

Map ID	Site	Database(s)	EPA ID Number

COMMUN, CENTER (Continued) **S102428057**

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	R032
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	L
Remedial Action Taken:	0
Substance:	Waste Oil
Date Reported:	Not reported
Facility Id:	RO0000235
Case Type:	FAUX
Case Closed:	Y
Date Closed:	**Not reported**

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26 **YOLO CO PUBLIC WORKS/W SAC YD** **UST** **U003851020**
213 4TH ST **N/A**
WEST SACRAMENTO, CA 95605

UST:

Region:	Yolo
Facility ID:	FA0000442
Owner ID:	OW0000353
Owner Name:	YOLO COUNTY PUBLIC WORKS
Owner Address:	292 W BEAMER ST
Owner City,St,Zip:	WOODLAND, CA 95695
Business Type:	99 - OTHER
Business ID:	09 - UNKNOWN
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	2,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	11/30/92
Inv Gen:	1992000442
Tank Number:	2
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	1,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	11/30/92
Inv Gen:	1992000442
Tank Number:	3
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	2,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	11/30/92

Map ID	Site	Database(s)	EPA ID Number

YOLO CO PUBLIC WORKS/W SAC YD (Continued) **U003851020**

Inv Gen: 1992000442

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27 **W SAC LIGHTHOUSE PUMP STATION** **UST** **U003640925**
310 B ST **N/A**
WEST SACRAMENTO, CA 95691

UST:

Region:	Yolo
Facility ID:	FA0000569
Owner ID:	OW0000105
Owner Name:	WEST SACRAMENTO, CITY OF
Owner Address:	1951 S RIVER RD
Owner City,St,Zip:	WEST SACRAMENTO, CA 95691
Business Type:	99 - OTHER
Business ID:	09 - UNKNOWN
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	motor vehicle
Tank Description:	DOUBLE WALLED
Tank Contents:	003
Tank Capacity:	2,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	03/01/01
Inv Gen:	1996000569

---

28 **422 - 424 C STREET** **US BROWNFIELDS** **1010082347**
422 - 424 C STREET **N/A**
WEST SACRAMENTO, CA 95691

US BROWNFIELDS:

Recipient Name:	City of West Sacramento
Project Name:	West Sacramento, CA (A05)
Name:	422 - 424 C Street
Parcel #:	010-495-14
Parcel size:	0.28
Latitude:	38.58883
Longitude:	-121.51080
Region:	9
HCM:	Address Matching-House Number
Map scale:	1:24000
Point of reference:	Entrance Point of a Facility or Station
Horiz. collect. method:	World Geodetic System of 1984
ACRES property ID:	43701
Start date:	12/28/2006
Complete date:	12/28/2006
Accomplishment:	Phase I Environmental Assessment
Ownership entity:	Government

Map ID	Site	Database(s)	EPA ID Number
29	**FORMER HUDSON** **500 C ST** **WEST SACRAMENTO, CA**	**LUST** **Cortese**	**S102430246** **N/A**

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	Not reported
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global Id:	T0611300035
Stop Date:	Not reported
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1987-06-03 00:00:00
Discover Date:	Not reported
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1990-01-12 00:00:00
Review Date:	Not reported
Enter Date:	1990-01-12 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Case Closed
Chemical:	Regular Gasoline
Contact Person:	Not reported
Responsible Party:	HUDSON OIL
RP Address:	Not reported
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff:	DFS
Staff Initials:	BRU
Lead Agency:	Local Agency
Local Agency:	57000
Hydr Basin #:	SACRAMENTO VALLEY (5
Beneficial:	Not reported
Priority:	3
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	Not reported
Case Number:	570056

Map ID	Site	Database(s)	EPA ID Number

FORMER HUDSON (Continued) **S102430246**

Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570056
Staff Initials: DFS
Substance: REGULR GASOLINE
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 500 C ST

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29 **STORM DRAINAGE PUMP STATION** **UST** **U003850958**
326 5TH STREET **N/A**
WEST SACRAMENTO, CA 95691

UST:
Region: Yolo
Facility ID: FA0003513
Owner ID: OW0003189
Owner Name: CITY OF WEST SACRAMENTO
Owner Address: 2101 STONE BLVD
Owner City,St,Zip: WEST SACRAMENTO, CA 95691
Business Type: 01 - GAS STATION, 2 pur
Business ID: 01 - CORPORATION
Current Status: Inactive
Program/Element: 2306 - UST PERMANENT CLOSURE PERMIT
Tank Number: 1
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 50
Leak Detection #: 99
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: 10/13/98
Inv Gen: 1998003513

Map ID	Site	Database(s)	EPA ID Number
30	**ELMER'S SERVICE** **427 C ST** **BRODERICK, CA 95605**	**HIST UST**	**U001612324** **N/A**

HIST UST:

Region:	STATE
Facility ID:	00000015867
Tank Num:	001
Container Num:	#3
Year Installed:	1970
Tank Capacity:	00001000
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0003
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor
Contact Name:	ELMER EUDY
Telephone:	9163712185
Owner Name:	LEON CAGLE
Owner Address:	1436 DOBROS DR.
Owner City,St,Zip:	BRYTE, CA 95605

Region:	STATE
Facility ID:	00000015867
Tank Num:	002
Container Num:	#1
Year Installed:	1965
Tank Capacity:	00001000
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0003
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor
Contact Name:	ELMER EUDY
Telephone:	9163712185
Owner Name:	LEON CAGLE
Owner Address:	1436 DOBROS DR.
Owner City,St,Zip:	BRYTE, CA 95605

Region:	STATE
Facility ID:	00000015867
Tank Num:	003
Container Num:	#2
Year Installed:	1970
Tank Capacity:	00001000
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0003
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Stock Inventor
Contact Name:	ELMER EUDY
Telephone:	9163712185
Owner Name:	LEON CAGLE

Map ID	Site	Database(s)	EPA ID Number

ELMER'S SERVICE (Continued) **U001612324**

Owner Address: 1436 DOBROS DR.
Owner City,St,Zip: BRYTE, CA 95605

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30 **ELMER'S SERVICE STATION** **HIST UST** **U001612325**
427 C ST **N/A**
BRODERICK, CA 95605

HIST UST:
Region: STATE
Facility ID: 00000051899
Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00001000
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0003
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: ELMER EUDY
Telephone: 9163720243
Owner Name: ELMER EDDY
Owner Address: 210 REDWOOD AVE
Owner City,St,Zip: SACRAMENTO, CA 95815

Region: STATE
Facility ID: 00000051899
Tank Num: 002
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00001000
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0003
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: Not reported
Leak Detection: Stock Inventor
Contact Name: ELMER EUDY
Telephone: 9163720243
Owner Name: ELMER EDDY
Owner Address: 210 REDWOOD AVE
Owner City,St,Zip: SACRAMENTO, CA 95815

Region: STATE
Facility ID: 00000051899
Tank Num: 003
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00001000
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0003
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported

Map ID	Site	Database(s)	EPA ID Number

ELMER'S SERVICE STATION (Continued) **U001612325**

Leak Detection: Stock Inventor
Contact Name: ELMER EUDY
Telephone: 9163720243
Owner Name: ELMER EDDY
Owner Address: 210 REDWOOD AVE
Owner City,St,Zip: SACRAMENTO, CA 95815

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30 **GARY'S MOWHAWK SERVICE CASE #2** **LUST** **S106229795**
427 C STREET **N/A**
WEST SACRAMENTO, CA 95605

LUST:
Region: STATE
Case Type: Other ground water affected
Cross Street: 5TH STREET
Enf Type: FREV
Funding: Not reported
How Discovered: SAS
How Stopped: CT,
Leak Cause: UNK
Leak Source: P,
Global Id: T0611338487
Stop Date: 2003-12-16 00:00:00
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 2004-03-25 00:00:00
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported
Discover Date: 2003-12-16 00:00:00
Enforcement Dt: Not reported
Release Date: 2004-04-04 00:00:00
Review Date: Not reported
Enter Date: Not reported
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 57
Org Name: Not reported
Reg Board: 5S
Status: Preliminary site assessment underway
Chemical: 8006619,1203
Contact Person: Not reported
Responsible Party: MIKE LUKEN
RP Address: 1110 WEST CAPITOL AVENUE
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: DFS
Staff Initials: ML
Lead Agency: Regional Board

Map ID	Site	Database(s)	EPA ID Number

GARY'S MOWHAWK SERVICE CASE #2 (Continued) **S106229795**

Local Agency: 57000
Hydr Basin #: Not reported
Beneficial: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: 570326
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570326
Staff Initials: DFS
Substance: Not reported
Case Type: Other ground water affected
Status: Preliminary site assessment underway
Lead Agency: Regional
Program: LUST
MTBE Code: N/A

---

30 **GARY'S SERVICE** **UST** **U004003672**
427 C ST **N/A**
BRODERICK, CA 95605

UST:
Region: Yolo
Facility ID: FA0000178
Owner ID: OW0000191
Owner Name: CAGLE LEON
Owner Address: 1436 DOBROS DR
Owner City,St,Zip: BRYTE, CA 95605
Business Type: 99 - OTHER
Business ID: 09 - UNKNOWN
Current Status: Inactive
Program/Element: 2306 - UST PERMANENT CLOSURE PERMIT
Tank Number: 1
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 1,000
Leak Detection #: 0
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: 01/01/92
Inv Gen: 1992000178
Tank Number: 2
Tank Type: petroleum
Tank Description: SINGLE WALLED

Map ID	Site	Database(s)	EPA ID Number

GARY'S SERVICE (Continued) **U004003672**

Tank Contents:	001
Tank Capacity:	1,000
Leak Detection #:	0
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	01/01/92
Inv Gen:	1992000178
Tank Number:	3
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	1,000
Leak Detection #:	0
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	01/01/92
Inv Gen:	1992000178

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30 **GARY'S SERVICE** **LUST** **S101306161**
427 C ST **Cortese** **N/A**
WEST SACRAMENTO, CA 95691

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	Not reported
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	Corrosion
Leak Source:	Tank
Global Id:	T0611300087
Stop Date:	1990-08-03 00:00:00
Confirm Leak:	1990-08-13 00:00:00
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1991-08-22 00:00:00
Discover Date:	1990-08-03 00:00:00
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1990-08-13 00:00:00
Review Date:	2000-05-17 00:00:00
Enter Date:	1990-08-23 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Case Closed
Chemical:	Gasoline
Contact Person:	Not reported

Map ID	Site	Database(s)	EPA ID Number

GARY'S SERVICE (Continued) **S101306161**

Responsible Party: GARY'S SERVICE
RP Address: P.O. BOX 148, WEST SACRAMENTO, 95691
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: DFS
Staff Initials: BRU
Lead Agency: Local Agency
Local Agency: 57000
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 570118
Qty Leaked: Not reported
Abate Method: Not reported
Operator: GARY MOHAWK
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570118
Staff Initials: DFS
Substance: GASOLINE
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 427 C ST

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31 **LEHRER VACANT LOT** **UST** **U003850884**
317-319 C ST **N/A**
WEST SACRAMENTO, CA 95691

UST:
Region: Yolo
Facility ID: FA0000586
Owner ID: OW0000478
Owner Name: LEHRER CO
Owner Address: 2601 N COMMONWEALTH
Owner City,St,Zip: LOS ANGELES, CA 90027
Business Type: 99 - OTHER
Business ID: 09 - UNKNOWN

Map ID	Site	Database(s)	EPA ID Number

LEHRER VACANT LOT (Continued) **U003850884**

Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	4,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000586
Tank Number:	2
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	4,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000586

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32 **CAPITOL PLATING** **HIST UST** **U001612322**
319 3RD ST **N/A**
BRODERICK, CA 95605

HIST UST:

Region:	STATE
Facility ID:	00000013691
Tank Num:	001
Container Num:	#8
Year Installed:	Not reported
Tank Capacity:	00005000
Facility Type:	Other
Other Type:	PLATING COMPANY
Total Tanks:	0001
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Visual
Contact Name:	BILL BURNLEY
Telephone:	9163723300
Owner Name:	STOCKTON PLATING, INC.
Owner Address:	632 SO. EL DORADO STREET
Owner City,St,Zip:	STOCKTON, CA 95206

Map ID	Site	Database(s)	EPA ID Number
32	**CAPITOL PLATING CORPORATION** **319 3RD STREET** **WEST SACRAMENTO, CA 95605**	**RESPONSE** **ENVIROSTOR**	**S101482938** **N/A**

RESPONSE:

Facility ID:	57340006
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	0.06
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	EDWARD CARGILE
Supervisor:	Richard Hume
Division Branch:	Central California
Site Code:	100327
Assembly:	08
Senate:	05
Special Program Status:	EPA - Target Site Investigation
Status:	Active
Status Date:	2006-08-16 00:00:00
Restricted Use:	NO
Funding:	* Unknown
Latitude:	38.5880555555556
Longitude:	-121.51
Alias Name:	010-371-03 STOCKTON PLATING INC (DBA CAPITOL PLT) 57340006 CAD065002180 100327
Alias Type:	Project Code (Site Code) HWIS Identification Code Envirostor ID Number APN Alternate Name
APN:	010-371-03
APN Description:	Not reported
Comments:	Recommend medium priority PEA. Contact owners to secure site.SITE SCREENING DONE. THE ENFORCEMENT UNIT IS WORKING ON MITIGATION IN RESPONSE TO NOV OF 7/14/86.Request sent on 2/28/07.Site Summary Investigation Report summerized existing data and new data from 2004 CPT and groundwater wells.Expedited Response Action completed. Stockton Plating , Inc. (parent company) and the current property owners worked cooperatively to secure the site with a fence and post warning signs.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1991-08-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-02-03 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork
Completed Date:	1992-03-06 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

CAPITOL PLATING CORPORATION (Continued) **S101482938**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2004-12-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Letter - Information Request
Completed Date:	2007-02-28 00:00:00
Confirmed:	30153,30193,30407
Confirmed Description:	Chromium VI
Confirmed Description:	1,2-Dichloroethane (EDC)
Confirmed Description:	Nickel
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30153, 30193, 30407
Potenital Description:	Chromium VI
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	Nickel
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	METAL PLATING - CHROME, METAL PLATING - OTHER

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	0.06
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	EDWARD CARGILE
Supervisor:	Richard Hume
Division Branch:	Central California
Facility ID:	57340006
Site Code:	100327
Assembly:	08
Senate:	05
Special Program:	EPA - Target Site Investigation
Status:	Active
Status Date:	2006-08-16 00:00:00
Restricted Use:	NO
Funding:	* Unknown
Latitude:	38.5880555555556
Longitude:	-121.51
Alias Name:	010-371-03
	STOCKTON PLATING INC (DBA CAPITOL PLT)
	57340006
	CAD065002180

Map ID	Site	Database(s)	EPA ID Number

CAPITOL PLATING CORPORATION (Continued) **S101482938**

	100327
Alias Type:	Project Code (Site Code)
	HWIS Identification Code
	Envirostor ID Number
	APN
	Alternate Name
APN:	010-371-03
APN Description:	Not reported
Comments:	Recommend medium priority PEA. Contact owners to secure site.SITE SCREENING DONE. THE ENFORCEMENT UNIT IS WORKING ON MITIGATION IN RESPONSE TO NOV OF 7/14/86.Request sent on 2/28/07.Site Summary Investigation Report summerized existing data and new data from 2004 CPT and groundwater wells.Expedited Response Action completed. Stockton Plating , Inc. (parent company) and the current property owners worked cooperatively to secure the site with a fence and post warning signs.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1991-08-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-02-03 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork
Completed Date:	1992-03-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2004-12-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Letter - Information Request
Completed Date:	2007-02-28 00:00:00
Confirmed:	30153,30193,30407
Confirmed Description:	Chromium VI
Confirmed Description:	1,2-Dichloroethane (EDC)
Confirmed Description:	Nickel
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30153, 30193, 30407
Potenital Description:	Chromium VI
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	Nickel
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported

Map ID	Site	Database(s)	EPA ID Number

CAPITOL PLATING CORPORATION (Continued) **S101482938**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: METAL PLATING - CHROME, METAL PLATING - OTHER

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32 **STOCKTON PLAT. INC DBA CAPITOL PLT. CO** **RCRA-SQG** **1000173668**
319 3RD ST **FINDS** **CAD065002180**
BRODERICK, CA 95605

RCRAInfo:
Owner: SMITH, NICK J
(415) 555-1212
EPA ID: CAD065002180

Contact: Not reported

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

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32 **CAPITOL PLATING - W SACRAMENTO** **UST** **U003850804**
319 3RD ST **N/A**
WEST SACRAMENTO, CA 95605

UST:
Region: Yolo
Facility ID: FA0000081
Owner ID: OW0000292
Owner Name: STOCKTON PLATING INC
Owner Address: PO BOX 6096
Owner City,St,Zip: STOCKTON, CA 95206
Business Type: 99 - OTHER
Business ID: 09 - UNKNOWN
Current Status: Inactive
Program/Element: 2306 - UST PERMANENT CLOSURE PERMIT
Tank Number: 1
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 5,000
Leak Detection #: 0
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: 01/01/92
Inv Gen: 1992000081

Map ID	Site	Database(s)	EPA ID Number
32	**WASHINGTON FIREHOUSE** **317 3RD STREET** **WEST SACRAMENTO, CA 95605**	**US BROWNFIELDS**	**1010082382** **N/A**

US BROWNFIELDS:

Recipient Name:	City of West Sacramento
Project Name:	West Sacramento, CA (A05)
Name:	Washington Firehouse
Parcel #:	010-371-04, 010-371-05, & 010-371-06
Parcel size:	0.59
Latitude:	38.58883
Longitude:	-121.51080
Region:	9
HCM:	Address Matching-House Number
Map scale:	1:24000
Point of reference:	Entrance Point of a Facility or Station
Horiz. collect. method:	World Geodetic System of 1984
ACRES property ID:	11213
Start date:	01/02/2007
Complete date:	1/2/2007
Accomplishment:	Phase I Environmental Assessment
Ownership entity:	Government

Recipient Name:	R9 TBA (Superfund Funded)
Project Name:	R9 TBA (Superfund Funded)
Name:	Washington Firehouse
Parcel #:	010-371-04, 010-371-05, & 010-371-06
Parcel size:	0.59
Latitude:	38.58883
Longitude:	-121.51080
Region:	9
HCM:	Address Matching-House Number
Map scale:	1:24000
Point of reference:	Entrance Point of a Facility or Station
Horiz. collect. method:	World Geodetic System of 1984
ACRES property ID:	11213
Start date:	/ /
Complete date:	2/25/2000
Accomplishment:	Phase II Environmental Assessment
Ownership entity:	Government

Recipient Name:	R9 TBA (Superfund Funded)
Project Name:	R9 TBA (Superfund Funded)
Name:	Washington Firehouse
Parcel #:	010-371-04, 010-371-05, & 010-371-06
Parcel size:	0.59
Latitude:	38.58883
Longitude:	-121.51080
Region:	9
HCM:	Address Matching-House Number
Map scale:	1:24000
Point of reference:	Entrance Point of a Facility or Station
Horiz. collect. method:	World Geodetic System of 1984
ACRES property ID:	11213
Start date:	/ /
Complete date:	2/28/2000
Accomplishment:	Phase II Environmental Assessment
Ownership entity:	Government

Map ID	Site	Database(s)	EPA ID Number
34	**ON THE BALL GRAPHICS** **500 5TH ST** **WEST SACRAMENTO, CA**	**LUST** **Cortese**	**S102434688** **N/A**

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	Not reported
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	OM
How Stopped:	Not reported
Leak Cause:	UNK
Leak Source:	Tank
Global Id:	T0611300154
Stop Date:	1988-03-08 00:00:00
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	Not reported
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1988-03-08 00:00:00
Discover Date:	1988-03-08 00:00:00
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1988-03-08 00:00:00
Review Date:	1993-01-26 00:00:00
Enter Date:	1993-01-26 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Case Closed
Chemical:	Gasoline
Contact Person:	Not reported
Responsible Party:	ON THE BALL GRAPHICS
RP Address:	500 5TH ST, WEST SACRAMENTO, CA
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	*
MTBE Conc:	0
MTBE Fuel:	1
MTBE Tested:	Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff:	DFS
Staff Initials:	BRU
Lead Agency:	Local Agency
Local Agency:	57000
Hydr Basin #:	SACRAMENTO VALLEY (5
Beneficial:	Not reported
Priority:	3
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	Not reported
Case Number:	570199

Map ID	Site	Database(s)	EPA ID Number

ON THE BALL GRAPHICS (Continued) **S102434688**

Qty Leaked: Not reported
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570199
Staff Initials: DFS
Substance: GASOLINE
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 500 5TH ST

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34 **OLD TRAILWAYS PROP** **HAZNET** **S104536169**
500 E ST **LUST** **N/A**
WEST SACRAMENTO, CA 95691 **Cortese**
LOS ANGELES CO. HMS

HAZNET:
Gepaid: CAC002573000
Contact: NEAL DOERHOFF
Telephone: 9162241111
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 500 W CAPITAL AVE
Mailing City,St,Zip: WEST SACRAMENTO, CA 95605
Gen County: Yolo
TSD EPA ID: CAD044003556
TSD County: Yolo
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: 4.58
Facility County: Yolo

LUST:
Region: STATE
Case Type: Soil only
Cross Street: 5TH STREET
Enf Type: None Taken
Funding: Not reported
How Discovered: Tank Closure
How Stopped: Not reported
Leak Cause: UNK

Map ID	Site	Database(s)	EPA ID Number

OLD TRAILWAYS PROP (Continued) **S104536169**

Leak Source: UNK
Global Id: T0611300065
Stop Date: 1989-07-28 00:00:00
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: 1989-07-28 00:00:00
Monitoring: Not reported
Close Date: 1992-10-22 00:00:00
Discover Date: 1989-07-28 00:00:00
Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1989-07-28 00:00:00
Review Date: 1992-10-22 00:00:00
Enter Date: 1989-10-30 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 57
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Diesel
Contact Person: Not reported
Responsible Party: RALEY'S
RP Address: P.O. BOX 15618, SACRAMENTO, CA 95852
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: DFS
Staff Initials: BRU
Lead Agency: Local Agency
Local Agency: 57000
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 2
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 570093
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site, Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming), Enhanced Biodegradation - use of any available technology to promote bacterial decomposition of contaminants
Operator: RALEY'S
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported

Map ID	Site	Database(s)	EPA ID Number

OLD TRAILWAYS PROP (Continued) **S104536169**

Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570093
Staff Initials: DFS
Substance: DIESEL
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 500 E ST

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 014466-015061
Facility Status: Removed
Area: 4A
Permit Number: 00005827T
Permit Status: Removed
Facility Type: T0

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35 **CHMIRS** **S105664103**
N/A

550 2ND ST.
WEST SACRAMENTO, CA

CHMIRS:
OES Incident Number: 00-5830
OES notification: 12/8/200003:59:03 PM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported

Map ID	Site	Database(s)	EPA ID Number

(Continued) **S105664103**

Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2000
Agency:	Yolo Co. Env Health
Incident Date:	12/8/200012:00:00 AM
Admin Agency:	Yolo County Office of Emergency Services
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	unk
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	100
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Some drums were found by fire department on vacant lot.

Map ID	Site	Database(s)	EPA ID Number
38	**W SACRAMENTO, CITY OF PUMP STN** **201 F STREET** **WEST SACRAMENTO, CA 95605**	**FINDS** **EMI**	**1006823213** **110013817735**

FINDS:
Other Pertinent Environmental Activity Identified at Site

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

EMI:

Year:	1998
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

W SACRAMENTO, CITY OF PUMP STN (Continued) **1006823213**

NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004

Map ID	Site	Database(s)	EPA ID Number

W SACRAMENTO, CITY OF PUMP STN (Continued) **1006823213**

Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0.01
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2005
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	615
Air District Name:	YS
SIC Code:	4952
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

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38 **RALEY'S LANDING** **UST** **U004014038**
600 2ND ST **N/A**
WEST SACRAMENTO, CA 95691

UST:

Region:	Yolo
Facility ID:	FA0000527
Owner ID:	OW0000390
Owner Name:	RALEY'S LANDING
Owner Address:	100 W CAPITOL AVE
Owner City,St,Zip:	W SACRAMENTO, CA 95605
Business Type:	99 - OTHER
Business ID:	09 - UNKNOWN
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	1,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000527

Map ID	Site	Database(s)	EPA ID Number

RALEY'S LANDING (Continued) **U004014038**

Tank Number: 1
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 003
Tank Capacity: 12,408
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000474
Tank Number: 1
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 550
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 002652

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38 **W SAC PUBLIC WORKS** **UST** **U004004447**
201 F ST **N/A**
WEST SACRAMENTO, CA 95691

UST:
Region: Yolo
Facility ID: FA0000570
Owner ID: OW0000105
Owner Name: WEST SACRAMENTO, CITY OF
Owner Address: 1951 S RIVER RD
Owner City,St,Zip: WEST SACRAMENTO, CA 95691
Business Type: 99 - OTHER
Business ID: 09 - UNKNOWN
Current Status: Inactive
Program/Element: 2306 - UST PERMANENT CLOSURE PERMIT
Tank Number: 1
Tank Type: motor vehicle
Tank Description: DOUBLE WALLED
Tank Contents: 003
Tank Capacity: 1,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: 11/14/96
Inv Gen: 1996000570

Map ID	Site	Database(s)	EPA ID Number

39 **SP, SAC.-LOCOMOTIVE WORKS** **CA BOND EXP. PLAN** **S100833179**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver, CO
Project Revenue Source Desc:	The Department has budgeted $100,000 for oversight activities. The RP has agreed in the enforceable agreement to pay DHS oversight costs on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	This is an old locomotive works for the cleaning and refurbishing of coal and diesel engines and railcars. The works were established in 1865.
Hazardous Waste Desc:	Known contaminants in shallow ground water include heavy metals, petroleum hydrocarbons, inorganic solvents and organic solvents. Lead is a heavy metal of particular concern. Benzene is a likely petroleum hydrocarbon contaminant. Kerosene is a likely organic solvent contaminant. Another organic solvent likely to have contaminated the site is 1,1,1-trichloroethane.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds and freshwater fish. The site is located within one half mile of the Sacramento and American Rivers. Shallow ground water flow is predominantly to the East. Wells serving Bannon Street residents have been tested for organics and metals. Results showed all wells to be uncontaminated by organics and metals.
Site Activity Status:	An enforceable agreement has been implemented between DHS and the RP. A scoping document has been submitted by the RP. A work plan and schedule for investigation and cleanup was submitted October, 1988. A number of underground tanks have already been removed and have received closure approval by the RWQCB.

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39 **UP, DOWNTOWN SAC - REDEVELOPMENT** **VCP** **S106568277**
401 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

VCP:

Facility ID:	34400011
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100552
Assembly:	09
Senate:	06
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	38.5871791164659 / -121.499330555556
Alias Name:	0737720230 SOUTHERN PACIFIC TRANSPORTATION CO. 34400011 100552 SP, SAC - REDEVELOPMENT

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Division Branch:	Central California
Facility ID:	34400011
Site Code:	100552
Assembly:	09
Senate:	06
Special Program:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5871791164659
Longitude:	-121.499330555556
Alias Name:	0737720230
	SOUTHERN PACIFIC TRANSPORTATION CO.
	34400011
	100552
	SP, SAC - REDEVELOPMENT
Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

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39 **SOUTHERN PACIFIC TRANS CO** **FINDS** **1000409221**
401 I ST **RCRA-LQG** **CAD073772030**
SACRAMENTO, CA 95814 **RCRA-TSDF**
RAATS
SLIC
CORRACTS
CERC-NFRAP
Sacramento Co. CS
ENVIROSTOR
NY MANIFEST

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

RCRAInfo Corrective Action Summary:

Event:	Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
Event Date:	01/09/2004
Event:	Igration of Contaminated Groundwater under Control, More information is needed to make a determination.
Event Date:	01/10/2001
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date:	01/10/2001
Event:	Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Map ID	Site	Database(s)	EPA ID Number
	SOUTHERN PACIFIC TRANS CO (Continued)		**1000409221**

Event Date: 04/06/1998

Event: Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date: 04/06/1998

Event: Certification Of Remedy Completion Or Construction Completion
Event Date: 06/21/1994

Event: CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date: 04/25/1994

Event: Stabilization Measures Evaluation,This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
Event Date: 04/25/1994

Event: Stabilization Measures Implemented, Groundwater extraction and treatment (e.g., to achieve groundwater containment, to achieve MCL).
Event Date: 10/20/1993

Event: Stabilization Construction Completed
Event Date: 04/05/1993

Event: Stabilization Measures Implemented, Primary measure is source removal and/or treatment (e.g., soil or waste excavation, in-situ soil treatment, off-site treatment).
Event Date: 01/15/1993

Event: Corrective Measures Design Approved
Event Date: 06/30/1992

Event: RFI Workplan Approved
Event Date: 01/27/1992

Event: RFI Workplan Approved
Event Date: 12/17/1991

Event: RFI Workplan Approved
Event Date: 10/18/1991

Event: Date For Remedy Selection (CM Imposed)
Event Date: 12/07/1989

Event: CMS Approved
Event Date: 04/30/1989

Event: RFI Approved
Event Date: 02/28/1989

Event: RFI Workplan Approved
Event Date: 01/31/1989

Event: CMS Workplan Approved
Event Date: 01/31/1989

Event: CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date: 08/08/1988

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Event: RFI Imposition
Event Date: 06/02/1988

RCRAInfo:
Owner: NAME NOT REPORTED
(415) 555-1212
EPA ID: CAD073772030

Contact: Not reported

Classification: Large Quantity Generator, TSDF
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 262.50-60
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 264.10-18.B
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.30-34.C
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.10-12.A
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.90-94.F
Area of Violation: TSD-GOUNDWATER MONITORING REQUIREMENTS
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.170-177.I
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/19/1991
Actual Date Achieved Compliance: 06/01/1991

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 05/01/1991
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/12/1990
Actual Date Achieved Compliance: 06/01/1990

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 04/26/1990
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 01/30/1989
Actual Date Achieved Compliance: 04/13/1989

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/16/1989
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/06/1987
Actual Date Achieved Compliance: 12/28/1987

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/16/1987
Penalty Type: Not reported

Regulation Violated: 264.140-150.H
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 09/19/1986
Actual Date Achieved Compliance: 12/16/1987

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
Final Monetary Penalty	11/8/1991	70000	STATE
Proposed Monetary Penalty	11/8/1991	125500	STATE

There are 11 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19941114
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19920725
	TSD-GOUNDWATER MONITORING REQUIREMENTS	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19910601
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19900601

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19890413
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19871228
Non-Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19871216

SLIC:

Region:	STATE
Global Id:	SLT5S2473286
Assigned Name:	SLICSITE
Lead Agency Contact:	CORI CONDON
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	SLT5S247
Responsible Party:	SAC. HOUSING & REDEVELOPMENT AGENCY
Recent Dtw:	Not reported
Substance Released:	VOC
Facility Status:	**Case Open**

CORRACTS:

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/09/2004
Action:	CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA750IN - Migration of Contaminated Groundwater under Control, More information is needed to make a determination
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	CENTRAL SHOPS AREA
Actual Date:	01/15/1993
Action:	CA600SR - Stabilization Measures Implemented, Primary measure is source removal and/or treatment
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	SOUTH PLUME AREA
Actual Date:	01/27/1992
Action:	CA150 - RFI Workplan Approved
NAICS Code(s):	Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA300 - CMS Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 02/28/1989
Action: CA200 - RFI Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 04/05/1993
Action: CA650 - Stabilization Construction Completed
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 04/30/1989
Action: CA350 - CMS Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/02/1988
Action: CA100 - RFI Imposition
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/21/1994
Action: CA550 - Certification Of Remedy Completion Or Construction Completion
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/30/1992
Action: CA450 - Corrective Measures Design Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 08/08/1988
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 10/18/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SOUTH PLUME AREA
Actual Date: 10/20/1993
Action: CA600GW - Stabilization Measures Implemented, Groundwater extraction and treatment
NAICS Code(s): Not reported

EPA ID: CAD073772030

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 12/07/1989
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: LAGOON/NORTH PLUME AREA
Actual Date: 12/17/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

CERC-NFRAP:
Site ID: 0901569
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: SACRAMENTO LOCOMOTIVE WORKS
Alias Address: Not reported
CA
Alias Name: UNION PACIFIC RR - SACRAMENTO
Alias Address: Not reported
CA
Alias Name: SO PACIFIC
Alias Address: Not reported
CA
Alias Name: SOUTHERN PACIFIC LOCOMOTIVE WORK
Alias Address: Not reported
CA
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/01/1980
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: 05/01/1984
Date Completed: 02/01/1985
Priority Level: Low

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Date Completed: 05/01/1988
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Sacramento Co. CS:
Region: SACRAMENTO
State Site Number: 0379
Lead Staff: ERIKSON, S.
Lead Agency: L
Remedial Action Taken: 1
Substance: Heater Fuel
Date Reported: 6/4/1991
Facility Id: RO0001105
Case Type: Other ground water affected
Case Closed: Y
Date Closed: 7/21/1997

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Central California
Facility ID: 34720169
Site Code: Not reported
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 1995-07-21 00:00:00
Restricted Use: NO
Funding: Not reported
Latitude: 38.5713888888889
Longitude: -121.505833333333
Alias Name: 34720169
Alias Type: Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Comments:	FACILITY IDENTIFIED INACTIVE #240. FACILITY DRIVE-BY DRIVE-BY-ACTIVE SITE. QUESTIONNAIRE RECEIVED.SITE SCREENING DONE.NEED MORE INFORMATION.Site Screening completed. County provided oversight of investigation and remediation in 1991 & 1992. Refer site to County.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1981-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1995-07-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-03-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

NY MANIFEST:

Document ID:	NYB2633598
Manifest Status:	Completed copy
Trans1 State ID:	10222PNY
Trans2 State ID:	Not reported
Generator Ship Date:	930126
Trans1 Recv Date:	930126
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	930209
Part A Recv Date:	930211
Part B Recv Date:	930219
Generator EPA ID:	CAD073772030
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Quantity:	00014
Units:	P - Pounds
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Year:	93
Manifest Tracking Num:	Not reported
Import Ind:	Not reported
Export Ind:	Not reported
Discr Quantity Ind:	Not reported
Discr Type Ind:	Not reported
Discr Residue Ind:	Not reported
Discr Partial Reject Ind:	Not reported
Discr Full Reject Ind:	Not reported
Manifest Ref Num:	Not reported
Alt Fac RCRA Id:	Not reported
Alt Fac Sign Date:	Not reported
Mgmt Method Type Code:	Not reported
EPA ID:	CAD073772030
Facility Name:	SOUTHERN PACIFICTRANSPORTATION
Facility Address:	401 I STREET
Facility City:	SACRAMENTO
Facility Address 2:	Not reported
Country:	USA
County:	Not reported
Mailing Name:	SOUTHERN PACIFICTRANSPORTATION
Mailing Contact:	JIM DIEL
Mailing Address:	401 I STREET
Mailing Address 2:	Not reported
Mailing City:	SACRAMENTO
Mailing State:	CA
Mailing Zip:	Not reported
Mailing Zip4:	Not reported
Mailing Country:	USA
Mailing Phone:	916-781-5217

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39 **SPRR-SACRAMENTO LOCOMOTIVE** **Sacramento Co. CS** **S104795582**
401 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	DT002
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	R
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000635
Case Type:	FAUX
Case Closed:	N
Date Closed:	**Not reported**

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - LAGOON** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **DEED** **ENVIROSTOR** **HIST Cal-Sites**	**S105954434** **N/A**

AWP:

AWP Facility ID:	34400008
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - LAGOON
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400008
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Funding:	Responsible Party
Latitude:	38.5919493975904
Longitude:	-121.498025
Alias Name:	34400004
	UP, DOWNTOWN SAC - LAGOON
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400008
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - LAGOON
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

	2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	1,4-Dioxane
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: ACTIVE
Deed Date(s): 07/11/01

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 40
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400008
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Active
Status Date: 1992-06-03 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5919493975904
Longitude: -121.498025

Alias Name:	Alias Type:
34400004	Envirostor ID Number
UP, DOWNTOWN SAC - LAGOON	Alternate Name
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION CO	Alternate Name
34400008	Alternate Name
SP-SAC - LOCOMOTIVE WORKS	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
SP, SAC - LAGOON	Envirostor ID Number
	Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300 2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	1,4-Dioxane
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:

Facility ID:	34400008
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	UP, DOWNTOWN SAC - LAGOON
State Senate District:	06031992
Status:	AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not Listed
SIC Code:	40
SIC Name:	RAILROAD TRANSPORTATION
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
Staff Member Responsible for Site:	SGOSS
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD** **LUST** **S101300908**
401 I ST **Cortese** **N/A**
SACRAMENTO, CA **WMUDS/SWAT**
SLIC
EMI

LUST:
Region: STATE
Case Type: Drinking Water Aquifer affected
Cross Street: Not reported
Enf Type: None Taken
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global Id: T0606700084
Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 2000-04-28 00:00:00
Discover Date: Not reported
Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1987-07-31 00:00:00
Review Date: 2000-04-28 00:00:00
Enter Date: 1988-09-06 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: SOUTHERN PACIFIC TRANSPO
RP Address: Not reported
Interim: Not reported
Oversight Prgm: LUFT
MTBE Class: *

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: VJF
Staff Initials: DWB
Lead Agency: Regional Board
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 340118
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: TWO RIVERS RV PARK
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: W0603900814
Waste Disch Assigned Name: 2000814-001GEN
Summary: SEE SLIC FOR FILES & REPORTS

LUST:
Region: 5
Case Number: 340118
Staff Initials: VJF
Substance: GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Case Closed
Lead Agency: Regional
Program: LUFT
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 401 I ST

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Region: CORTESE
Facility Addr2: Not reported

WMUDS/SWAT:
Edit Date: Not reported
Complexity: Not reported
Primary Waste: Contaminated Soil
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Base Meridian: Not reported
NPID: Not reported
Tonnage: 0
Regional Board ID: Not reported
Municipal Solid Waste: False
Superorder: False
Open To Public: False
Waste List: False
Agency Type: Private
Agency Name: SO. PAC. TRANSPORTATION CO.
Agency Department: Not reported
Agency Address: 1 MARKET PLAZA
Agency City,St,Zip: SAN FRANCISCO CA 94105
Agency Contact: MARK RANSOM
Agency Telephone: 4155411495
Land Owner Name: Not reported
Land Owner Address: Not reported
Land Owner City,St,Zip: Not reported
Land Owner Contact: Not reported
Land Owner Phone: Not reported
Region: 5S
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description: Not reported
Facility Telephone: Not reported
SWAT Facility Name: Not reported
Primary SIC: 4011
Secondary SIC: Not reported
Comments: Not reported
Last Facility Editors: Not reported
Waste Discharge System: True
Solid Waste Assessment Test Program: False
Toxic Pits Cleanup Act Program: False
Resource Conservation Recovery Act: True
Department of Defence: False
Solid Waste Assessment Test Program: Not reported
Threat to Water Quality: Not reported
Sub Chapter 15: False
Regional Board Project Officer: AMM
Number of WMUDS at Facility: 1

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Section Range: Not reported
RCRA Facility: No
Waste Discharge Requirements: Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire.
Self-Monitoring Rept. Frequency: Monthly Submittal
Waste Discharge System ID: 5A342000N01
Solid Waste Information ID: Not reported

SLIC:
Region: STATE
Global Id: SL205072992
Assigned Name: SLICSITE
Lead Agency Contact: STEVEN W. MEEKS
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SL205072992
Responsible Party: UNION PACIFIC RAILROAD COMPANY
Recent Dtw: 14.5
Substance Released: CR, MET, PET, SVO, VOC
Facility Status: Not reported

SLIC:
Region: 5
Facility Status: R I/FS/REM
Unit: Facility is a Spill or site
Pollutant: VOCs ,TPH, metals
Lead Agency: WTE
Date Filed: / /
Report Date: / /
Date Added: Not reported
Date Closed: Not reported

EMI:
Year: 1987
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 55
Reactive Organic Gases Tons/Yr: 35
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	17
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

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39 **SP, SAC. - BATTERY SHOP** **CA BOND EXP. PLAN** **S100833177**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad/Southern Pacific Transportation Co.
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver/San Francisco, CO/CA
Project Revenue Source Desc:	The Department has budgeted $50,000 for oversight of the responsible parties cleanup activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	The site encompasses three RCRA sites under one Court Order. The Court Order time schedule was included in an Enforceable Agreement dated June 2, 1988. These entail (a) a battery storage and disposal area (including dry well disposal), (b) a 2000 square foot drum storage area (containing solvents) and (c) a grit blast waste pile area (containing over 3100 cubic yards of sand).
Hazardous Waste Desc:	Contaminants include (a) copper, lead and petroleum hydrocarbons at the grit blast area, (b) lead and acids at the battery storage and disposal area, and (c) lead and organic compounds at the drum storage area.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact at all three locations. Potential receptors include humans, mammals, birds and freshwater fish. The site is within one half mile of the Sacramento and American Rivers, and seasonal fluctuation of shallow ground water direction has been confirmed.
Site Activity Status:	A third round of soil and ground water sampling was completed in September, 1988. Results from these investigations will be used to modify the analysis of remedial alternatives presented in March, 1988. A Court Order was signed July 30, 1987. The Order set a time schedule for a combined RAP/RCRA Closure. The time schedule in the Court Order was included in an enforceable agreement with DHS dated June 2, 1988. As an interim remedial measure it is proposed to centralize contaminated soils from the Battery Shop, Drum Storage and Sand Pile sites. Stockpiled wastes will be tarped. Drainage will also be collected down slope. Wastes will be stockpiled above visqueen to prevent percolation.

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39 **SP, SAC - BATTERY SHOP YARD** **RESPONSE** **S100351390**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34360065
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-21 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5866983935742
Longitude:	-121.502530555556
Alias Name:	34400004 CAD073772030 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION COMPANY SP-SAC - BATTERY SHOP SP, SAC - BATTERY SHOP YARD SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 34360065 SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number EPA Identification Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10097, 10119, 30013, 30407
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	Lead
Potenital Description:	Nickel
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	BATTERY STORAGE

DEED:
Area: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 06/28/90

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34360065
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-21 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5866983935742
Longitude: -121.502530555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION COMPANY	Alternate Name
SP-SAC - BATTERY SHOP	Alternate Name
SP, SAC - BATTERY SHOP YARD	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
34360065	Envirostor ID Number
SP-SAC - LOCOMOTIVE WORKS	Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: 5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Management Required Desc: Not reported
Potential: 10097, 10119, 30013, 30407
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * ACID SOLUTION 2>PH WITH METALS
Potenital Description: Lead
Potenital Description: Nickel
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: BATTERY STORAGE

HISTORICAL CAL-SITES:
Facility ID: 34360065
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06211990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 36
SIC Name: MANU - ELECTRONIC & OTHER ELECTRIC EQUIP
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

Map ID	Site	Database(s)	EPA ID Number
39	**SP, SAC - SAND PILES** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **ENVIROSTOR** **HIST Cal-Sites**	**S100351371** **N/A**

RESPONSE:

Facility ID:	34320031
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-22 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5857369477911
Longitude:	-121.499380555556
Alias Name:	SOUTHERN PACIFIC TRANSPORTATION CO 34400004 SP, SAC - SAND PILES 34320031 100139
Alias Type:	Envirostor ID Number Project Code (Site Code) Envirostor ID Number Alternate Name Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1989-11-24 00:00:00
Confirmed:	30013
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34320031
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-22 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5857369477911
Longitude: -121.499380555556
Alias Name: SOUTHERN PACIFIC TRANSPORTATION CO
34400004
SP, SAC - SAND PILES
34320031
100139
Alias Type: Envirostor ID Number
Project Code (Site Code)
Envirostor ID Number
Alternate Name
Alternate Name
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1990-06-22 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Completed Document Type: Remedial Action Completion Report
Completed Date: 1989-11-24 00:00:00
Confirmed: 30013
Confirmed Description: Lead
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: 5 Year Review Reports
Future Due Date: 2009
Media Affected: SOIL
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

HISTORICAL CAL-SITES:
Facility ID: 34320031
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06221990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Unknown
SIC Code: 32
SIC Name: MANU - STONE, CLAY & GLASS PRODUCTS
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SP, SAC. - PONDS & DITCH** **CA BOND EXP. PLAN** **S100833178**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Southern Pacific Transportation Company/Denver and Rio Grande Railroad
Project Revenue Source Addr:	Southern Pacific Building, 1 Market Plaza
Project Revenue Source City,St,Zip:	San Francisco/Denver, CA/CO 94105
Project Revenue Source Desc:	DHS has budgeted $50,000 for oversight activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	Industrial waste water disposal ponds and an industrial waste water conveyance ditch are the focal points of this site investigation. A RAP/RCRA closure is required.
Hazardous Waste Desc:	Sludge and soil samples analyzed contained high concentrations of copper, lead, zinc, 1,1,1-trichloroethane, trichloroethane, tetrachloroethene, naphthalene, and bis (2-ethylhexyl) phthalate. Ground water contaminants include chromium, methylene chloride, 1,1-dichloroethane (ethylene chloride), and trans-acetylene dichloride (trans-1,2-dichloroethane).
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds, insects, freshwater fish, nematodes, soil bacteria and grasses common to the Central Valley. The City of Sacramento has a domestic water intake from the Sacramento River located approximately one mile north of the site. Ground water is used by the State Printing Plant and Crystal Dairy for industrial purposes just north of the site. Wells serving Bannon Street residents have been tested for organics, metals and coliform organisms. Results showed all wells uncontaminated by organics and metals.
Site Activity Status:	Sludge from both the ponds and ditch was excavated and disposed of at a Class I landfill in 1984 and 1985 as IRMs. Three rounds of remedial investigation have been completed at the ponds and ditch, the most recent in May, 1987. Bench scale testing of soil solidification and soil washing is now underway. Until a final design is approved, the extraction well near the ponds and ditch has been turned off. A final feasibility study (FS) was received in October, 1988.

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39 **SP, SAC - SACRAMENTO STATION** **RESPONSE** **S101481755**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34400006
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified
Status Date:	1994-06-02 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5847502008032
Longitude:	-121.500730555556
Alias Name:	34400004
	CAD073772030
	P14013
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	SP, SAC - SACRAMENTO STATION
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	34400006
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

	laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1989-02-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10002, 10097, 10196, 30013
Potenital Description: * HALOGENATED ORGANIC COMPOUNDS
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * UNSPECIFIED OIL CONTAINING WASTE
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAILROAD RIGHT OF WAY

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400006
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Certified
Status Date: 1994-06-02 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5847502008032
Longitude: -121.500730555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
P14013	PCode
SACRAMENTO RAILYARD FACILITY	
SOUTHERN PACIFIC TRANSPORTATION CO	
SP, SAC - SACRAMENTO STATION	
SP-SAC - OVERALL SITE	
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	
100139	
34400006	
SP-SAC - LOCOMOTIVE WORKS	

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Deed Restriction / Land Use Covenant
Completed Date: 1994-05-19 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1994-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1989-02-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1988-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAILROAD RIGHT OF WAY

HISTORICAL CAL-SITES:

Facility ID:	34400006
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	06021994
Status:	CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Status Name:	CERTIFIED
Lead Agency:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not Listed
SIC Code:	40
SIC Name:	RAILROAD TRANSPORTATION
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
Staff Member Responsible for Site:	SGOSS
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported
Region Water Control Board Name:	Not reported
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	09
State Senate District Code:	06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UP, DOWNTOWN SAC - CENTRAL SHOPS** **CHMIRS** **S105954432**
401 I STREET **RESPONSE** **N/A**
SACRAMENTO, CA 95814 **DEED**
ENVIROSTOR
HIST Cal-Sites

CHMIRS:

OES Incident Number:	03-3608
OES notification:	7/18/200302:53:32 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	Union Pacific Railroad
Incident Date:	7/18/200312:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Train Derailment
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	1
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported
OES Incident Number:	05-3945
OES notification:	7/1/200505:52:41 PM
OES Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Amtrak
Incident Date:	7/1/200512:00:00 AM
Admin Agency:	Sacramento City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Diesel
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Gallons:	3
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported

AWP:

AWP Facility ID:	34400004
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	01011983
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	CV
RWQCB Associated With Site:	CENTRAL VALLEY
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	6
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400007
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
Current Status Date:	01011990
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400009
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400010
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400004
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	6
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Status:	Active
Status Date:	1983-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5874345180723
Longitude:	-121.500845
Alias Name:	CAD073772030
	34400010
	P11077
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400004
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - CENTRAL SHOP
Alias Type:	EPA Identification Number
	Envirostor ID Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC’s request for an indoor air evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required.

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1980-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1984-03-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-05-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	2005-07-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2005-12-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2002-10-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-08-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-03-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,30433,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,3050,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400005
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004 CAD073772030 P14029 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400005 SP-SAC - LOCOMOTIVE WORKS SP-SAC - OVERALL SITE SP-SAC - PONDS AND DITCH UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - PONDS AND DITCH
Alias Type:	Envirostor ID Number EPA Identification Number PCode Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane
Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400007
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	50

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,3026-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene 30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

Facility ID:	34400009
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION COMPANY
	SP, SAC - CAR SHOP NINE
	34400009
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400010
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030
	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400010
	SP-SAC LOCOMOTIVE WORKS
	SP-SAC OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - CENTRAL CORRIDOR
Alias Type:	EPA Identification Number
	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE
Status:	ACTIVE
Deed Date(s):	07/11/01

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 6
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400004
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Active
Status Date: 1983-01-01 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5874345180723
Longitude: -121.500845
Alias Name:
CAD073772030
34400010
P11077
SACRAMENTO RAILYARD FACILITY
SOUTHERN PACIFIC TRANSPORTATION CO
34400004
SP-SAC - LOCOMOTIVE WORKS
SP-SAC - OVERALL SITE
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - CENTRAL SHOP
Alias Type:
EPA Identification Number
Envirostor ID Number
PCode
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC's request for an indoor air

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required. This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1980-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1984-03-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-05-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	2005-07-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2005-12-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2002-10-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-08-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-03-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000 ,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,304 3,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,30 50,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400005
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004
	CAD073772030
	P14029
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400005
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	SP-SAC - PONDS AND DITCH

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - PONDS AND DITCH

Alias Type: Envirostor ID Number
EPA Identification Number
PCode
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve

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UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	50
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400007
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304 1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,30 26-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
	30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400009
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION COMPANY
	SP, SAC - CAR SHOP NINE
	34400009
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Project Code (Site Code)
Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400010
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SP-SAC OVERALL SITE
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - CENTRAL CORRIDOR

Alias Type:	EPA Identification Number
	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400004
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01011983
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: CV
Region Water Control Board Name: CENTRAL VALLEY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400005
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01121996
Status: COM - CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED REMEDIATION CONTINUES
Status Name: CERTIFIED / OPERATION & MAINTENANCE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400007
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
State Senate District: 01011990
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400009
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400010
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SUSD** **Sacramento Co. CS** **S104795583**
425 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	R094
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	L
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000636
Case Type:	FAUX
Case Closed:	Y
Date Closed:	**Not reported**

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39 **UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **RESPONSE** **S107737490**
400 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

RESPONSE:

Facility ID:	70000034
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034 100139
Alias Type:	Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	70000034
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034
	100139
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1008984943** **N/A**

Manufactured Gas Plants:

A new area was added in 2003, entitled the Manufactured Gas Plant (MGP) Area, which was established after discovering remnants of an MGP on the western boundary of the northern shops area during soil remediation activities in the Northern Shops area.

39	**UP, DOWNROWN SAC-MANUFACTURED GAS PLAN** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1009508587** **N/A**

40	**DELTA KING** **1000 FRONT ST** **SACRAMENTO, CA 95814**	**Sacramento Co. ML**	**S105269360** **N/A**

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Disclaimer
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	50
Food Bill Code:	50
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

41	**FIRST UNION BANK C O JONES LANG LASALLE** **707 3RD ST** **W SACRAMENTO, CA 95605**	**RCRA-SQG** **FINDS** **HAZNET**	**1005441125** **CAR000115766**

Map ID	Site	Database(s)	EPA ID Number

FIRST UNION BANK C O JONES LANG LASALLE (Continued) **1005441125**

RCRAInfo:
Owner: F U N B C O JONES L LASALLE
(916) 344-9133
EPA ID: CAR000115766
Contact: LARRY COLBERT
(916) 374-9133
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Gepaid: CAR000115766
Contact: Larry Colbert
Telephone: 9163749133
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 707 3rd St
Mailing City,St,Zip: W Sacramento, CA 95605
Gen County: Yolo
TSD EPA ID: Not reported
TSD County: Santa Clara
Waste Category: Laboratory waste chemicals
Disposal Method: Disposal, Other
Tons: 0.22
Facility County: Not reported

Gepaid: CAR000115766
Contact: Larry Colbert
Telephone: 9163749133
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 707 3rd St
Mailing City,St,Zip: W Sacramento, CA 95605
Gen County: Yolo
TSD EPA ID: Not reported
TSD County: Santa Clara
Waste Category: Laboratory waste chemicals
Disposal Method: Transfer Station
Tons: 0.02
Facility County: Not reported

Map ID	Site	Database(s)	EPA ID Number

FIRST UNION BANK C O JONES LANG LASALLE (Continued) **1005441125**

Gepaid:	CAR000115766
Contact:	Larry Colbert
Telephone:	9163749133
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	707 3rd St
Mailing City,St,Zip:	W Sacramento, CA 95605
Gen County:	Yolo
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Treatment, Tank
Tons:	0.01
Facility County:	Not reported

---

41 **VACANT PROPERTY** **UST** **U004004440**
710-712 3RD ST **N/A**
WEST SACRAMENTO, CA 95691

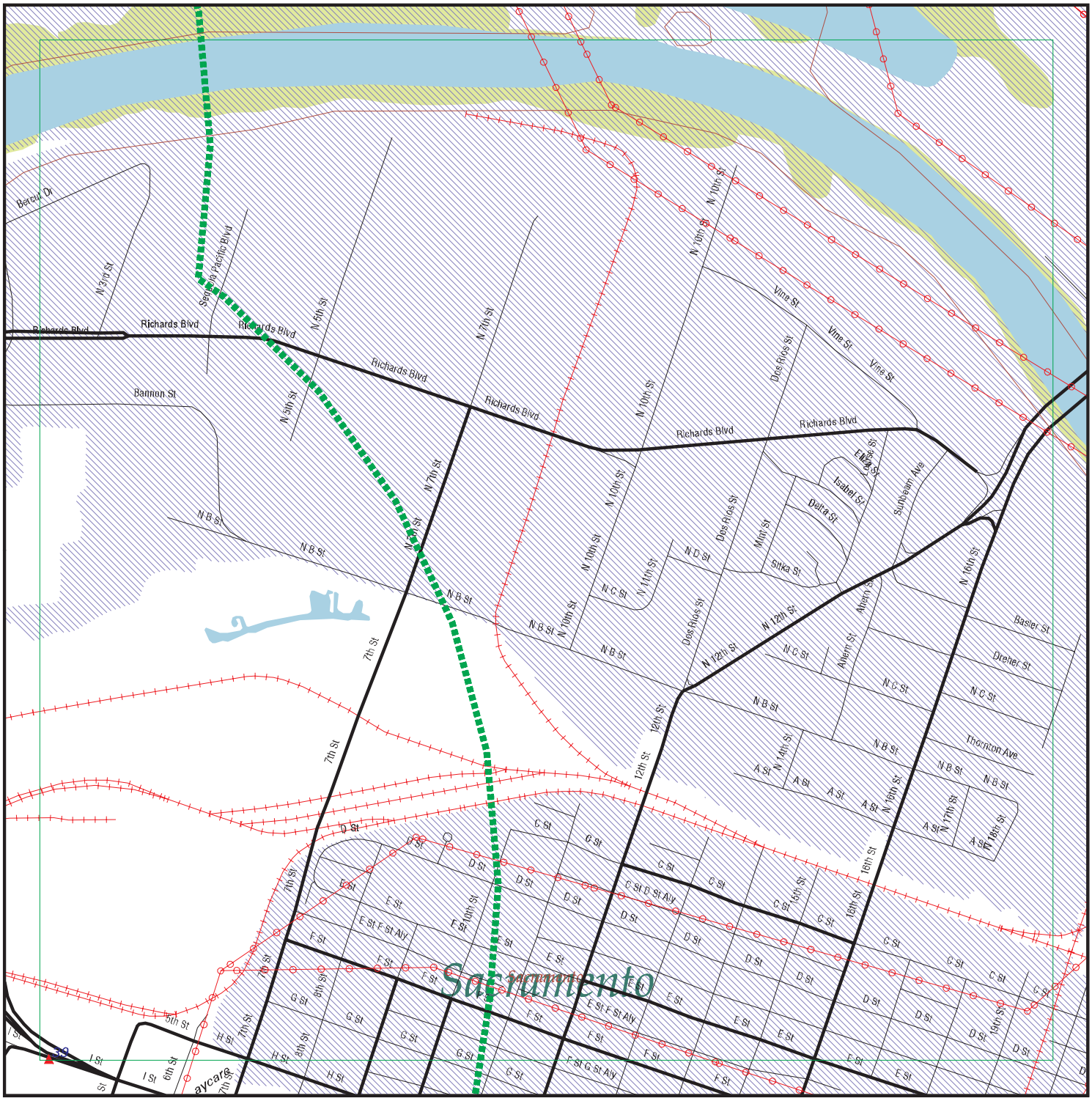
UST:

Region:	Yolo
Facility ID:	FA0002470
Owner ID:	OW0002236
Owner Name:	KNIGHT MGMT & DEVELOPMENT CORP
Owner Address:	944 47TH ST
Owner City,St,Zip:	SACRAMENTO, CA 95819
Business Type:	01 - GAS STATION, 2 pur
Business ID:	01 - CORPORATION
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	motor vehicle
Tank Description:	DOUBLE WALLED
Tank Contents:	999
Tank Capacity:	1,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	002470

FOCUS MAP 9 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
SACRAMENTO	1003878554	SMUD NORTH CITY SUBSTA	20TH & N B STS	95814	CERC-NFRAP
SACRAMENTO	1003878854	SACRAMENTO MUNICIPAL LDFL	28TH & A ST	95814	CERC-NFRAP
SACRAMENTO	1010082283	HERITAGE DRY CLEANERS	13100 BLOCK OF MONO WAY	95814	CERCLIS
SACRAMENTO	1003879067	UNION CARBIDE CORP-LINDE DIV	CARBIDE CT	95814	CERC-NFRAP
SACRAMENTO	S105454993	TRI STAR AUTO CARE	701 DOS RIOS ST UNIT B	95814	HAZNET, Sacramento Co. ML
SACRAMENTO	S103678764	SMUD, FRONT & T STREETS	FRONT / T ST	95814	HAZNET, Cortese
SACRAMENTO	S101481621	CALTRANS, I-5 Q STREET OFF-RAMP	I-5 Q STREET OFF-RAMP	95814	RESPONSE, DEED, ENVIROSTOR, H Cal-Sites
W SACRAMENTO	U004004351	SMISER FREIGHT	832 F ST	95691	UST
W SACRAMENTO	U003850805	CARGILL INC	STONE BLVD-PORT OF SACRAMENTO	95691	UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	U003850915	P G & E - WINCHESTER LK	BURROWS/W OF JEFFERSON	95691	UST
WEST SACRAMENTO	1001217575	WORLD ENVIRONMENTAL AND ENERGY INC	3208 W CAPITOL AVE EASTSIDE	95691	PADS, RCRA-SQG, FINDS
WEST SACRAMENTO	U003850800	CAL-TRANS	W CAPITOL AVE	95691	UST
WEST SACRAMENTO	S107138462	TEXACO SERVICE STATION (FORMER)	WEST CAPITOL / THIRD STREET	95691	LUST
WEST SACRAMENTO	U001614181	DESERET FARMS	2518 COUNTY ROAD 117	95691	HIST UST
WEST SACRAMENTO	U004003829	NOR CAL ASSOC/KAUFMAN MANIKAS	JEFFERSON AT MARSHALL	95691	UST
WEST SACRAMENTO	U004004463	WILLOW POINT RANCH	JEFFERSON BLVD & WILLOW POINT	95691	UST
WEST SACRAMENTO	S101482951	TOMLIN'S SUNSHINE CLEANERS	612 MICHIGAN BLVD	95691	ENVIROSTOR
WEST SACRAMENTO	S105694082	FOOD & LIQUOR #119 (KAYO)	731 POPLAR ST (AKA: 1840 WEST CAPITOL)	95691	LUST
WEST SACRAMENTO	U001614172	CARGILL INC.	PORT OF SACRAMENTO-STONE BLVD	95691	HIST UST
WEST SACRAMENTO	U004003776	LIGHTHOUSE MARINA - PHASE IB	CR RD-DISCOVERY PARK 156LE	95605	UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST

Focus Map 10



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 10 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	1
CORRACTS	1
RCRA TSD	1
RCRA Lg. Quan. Gen.	1
RCRA Sm. Quan. Gen.	0
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	1
RAATS	1
STATE AND LOCAL RECORDS	
Hist Cal-Sites	5
CA Bond Exp. Plan	3
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	1

FOCUS MAP 10 SUMMARY

Database	Total Plotted
Cortese	1
SWRCY	0
LUST	1
CA FID UST	0
SLIC	2
UST	0
HIST UST	0
AST	0
LIENS	0
SWEEPS UST	0
CHMIRS	1
Notify 65	0
DEED	4
VCP	1
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	6
HAZNET	0
EMI	1
HAULERS	0
ENVIROSTOR	8
TRIBAL RECORDS	
INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0
EDR PROPRIETARY RECORDS	
Manufactured Gas Plants	2

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number

39 **SP, SAC.-LOCOMOTIVE WORKS** **CA BOND EXP. PLAN** **S100833179**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver, CO
Project Revenue Source Desc:	The Department has budgeted $100,000 for oversight activities. The RP has agreed in the enforceable agreement to pay DHS oversight costs on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	This is an old locomotive works for the cleaning and refurbishing of coal and diesel engines and railcars. The works were established in 1865.
Hazardous Waste Desc:	Known contaminants in shallow ground water include heavy metals, petroleum hydrocarbons, inorganic solvents and organic solvents. Lead is a heavy metal of particular concern. Benzene is a likely petroleum hydrocarbon contaminant. Kerosene is a likely organic solvent contaminant. Another organic solvent likely to have contaminated the site is 1,1,1-trichloroethane.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds and freshwater fish. The site is located within one half mile of the Sacramento and American Rivers. Shallow ground water flow is predominantly to the East. Wells serving Bannon Street residents have been tested for organics and metals. Results showed all wells to be uncontaminated by organics and metals.
Site Activity Status:	An enforceable agreement has been implemented between DHS and the RP. A scoping document has been submitted by the RP. A work plan and schedule for investigation and cleanup was submitted October, 1988. A number of underground tanks have already been removed and have received closure approval by the RWQCB.

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39 **UP, DOWNTOWN SAC - REDEVELOPMENT** **VCP** **S106568277**
401 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

VCP:

Facility ID:	34400011
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100552
Assembly:	09
Senate:	06
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	38.5871791164659 / -121.499330555556
Alias Name:	0737720230 SOUTHERN PACIFIC TRANSPORTATION CO. 34400011 100552 SP, SAC - REDEVELOPMENT

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Division Branch:	Central California
Facility ID:	34400011
Site Code:	100552
Assembly:	09
Senate:	06
Special Program:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5871791164659
Longitude:	-121.499330555556
Alias Name:	0737720230
	SOUTHERN PACIFIC TRANSPORTATION CO.
	34400011
	100552
	SP, SAC - REDEVELOPMENT
Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

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39 **SOUTHERN PACIFIC TRANS CO** **FINDS** **1000409221**
401 I ST **RCRA-LQG** **CAD073772030**
SACRAMENTO, CA 95814 **RCRA-TSDF**
RAATS
SLIC
CORRACTS
CERC-NFRAP
Sacramento Co. CS
ENVIROSTOR
NY MANIFEST

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

RCRAInfo Corrective Action Summary:

Event:	Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
Event Date:	01/09/2004
Event:	Igration of Contaminated Groundwater under Control, More information is needed to make a determination.
Event Date:	01/10/2001
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date:	01/10/2001
Event:	Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Event Date:	04/06/1998
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date:	04/06/1998
Event:	Certification Of Remedy Completion Or Construction Completion
Event Date:	06/21/1994
Event:	CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date:	04/25/1994
Event:	Stabilization Measures Evaluation,This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
Event Date:	04/25/1994
Event:	Stabilization Measures Implemented, Groundwater extraction and treatment (e.g., to achieve groundwater containment, to achieve MCL).
Event Date:	10/20/1993
Event:	Stabilization Construction Completed
Event Date:	04/05/1993
Event:	Stabilization Measures Implemented, Primary measure is source removal and/or treatment (e.g., soil or waste excavation, in-situ soil treatment, off-site treatment).
Event Date:	01/15/1993
Event:	Corrective Measures Design Approved
Event Date:	06/30/1992
Event:	RFI Workplan Approved
Event Date:	01/27/1992
Event:	RFI Workplan Approved
Event Date:	12/17/1991
Event:	RFI Workplan Approved
Event Date:	10/18/1991
Event:	Date For Remedy Selection (CM Imposed)
Event Date:	12/07/1989
Event:	CMS Approved
Event Date:	04/30/1989
Event:	RFI Approved
Event Date:	02/28/1989
Event:	RFI Workplan Approved
Event Date:	01/31/1989
Event:	CMS Workplan Approved
Event Date:	01/31/1989
Event:	CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date:	08/08/1988

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Event: RFI Imposition
Event Date: 06/02/1988

RCRAInfo:
Owner: NAME NOT REPORTED
(415) 555-1212
EPA ID: CAD073772030

Contact: Not reported

Classification: Large Quantity Generator, TSDF
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 262.50-60
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 264.10-18.B
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.30-34.C
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.10-12.A
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.90-94.F
Area of Violation: TSD-GOUNDWATER MONITORING REQUIREMENTS
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.170-177.I
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/19/1991
Actual Date Achieved Compliance: 06/01/1991

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 05/01/1991
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/12/1990
Actual Date Achieved Compliance: 06/01/1990

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 04/26/1990
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 01/30/1989
Actual Date Achieved Compliance: 04/13/1989

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/16/1989
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/06/1987
Actual Date Achieved Compliance: 12/28/1987

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/16/1987
Penalty Type: Not reported

Regulation Violated: 264.140-150.H
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 09/19/1986
Actual Date Achieved Compliance: 12/16/1987

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
Final Monetary Penalty	11/8/1991	70000	STATE
Proposed Monetary Penalty	11/8/1991	125500	STATE

There are 11 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19941114
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19920725
	TSD-GOUNDWATER MONITORING REQUIREMENTS	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19910601
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19900601

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19890413
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19871228
Non-Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19871216

SLIC:

Region:	STATE
Global Id:	SLT5S2473286
Assigned Name:	SLICSITE
Lead Agency Contact:	CORI CONDON
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	SLT5S247
Responsible Party:	SAC. HOUSING & REDEVELOPMENT AGENCY
Recent Dtw:	Not reported
Substance Released:	VOC
Facility Status:	**Case Open**

CORRACTS:

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/09/2004
Action:	CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA750IN - Migration of Contaminated Groundwater under Control, More information is needed to make a determination
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	CENTRAL SHOPS AREA
Actual Date:	01/15/1993
Action:	CA600SR - Stabilization Measures Implemented, Primary measure is source removal and/or treatment
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	SOUTH PLUME AREA
Actual Date:	01/27/1992
Action:	CA150 - RFI Workplan Approved
NAICS Code(s):	Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA300 - CMS Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 02/28/1989
Action: CA200 - RFI Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 04/05/1993
Action: CA650 - Stabilization Construction Completed
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is

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SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 04/30/1989
Action: CA350 - CMS Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/02/1988
Action: CA100 - RFI Imposition
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/21/1994
Action: CA550 - Certification Of Remedy Completion Or Construction Completion
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/30/1992
Action: CA450 - Corrective Measures Design Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 08/08/1988
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 10/18/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SOUTH PLUME AREA
Actual Date: 10/20/1993
Action: CA600GW - Stabilization Measures Implemented, Groundwater extraction and treatment
NAICS Code(s): Not reported

EPA ID: CAD073772030

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 12/07/1989
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: LAGOON/NORTH PLUME AREA
Actual Date: 12/17/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

CERC-NFRAP:
Site ID: 0901569
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: SACRAMENTO LOCOMOTIVE WORKS
Alias Address: Not reported
CA
Alias Name: UNION PACIFIC RR - SACRAMENTO
Alias Address: Not reported
CA
Alias Name: SO PACIFIC
Alias Address: Not reported
CA
Alias Name: SOUTHERN PACIFIC LOCOMOTIVE WORK
Alias Address: Not reported
CA
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/01/1980
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: 05/01/1984
Date Completed: 02/01/1985
Priority Level: Low

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Date Completed: 05/01/1988
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Sacramento Co. CS:
Region: SACRAMENTO
State Site Number: 0379
Lead Staff: ERIKSON, S.
Lead Agency: L
Remedial Action Taken: 1
Substance: Heater Fuel
Date Reported: 6/4/1991
Facility Id: RO0001105
Case Type: Other ground water affected
Case Closed: Y
Date Closed: 7/21/1997

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Central California
Facility ID: 34720169
Site Code: Not reported
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 1995-07-21 00:00:00
Restricted Use: NO
Funding: Not reported
Latitude: 38.5713888888889
Longitude: -121.505833333333
Alias Name: 34720169
Alias Type: Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Comments:	FACILITY IDENTIFIED INACTIVE #240. FACILITY DRIVE-BY DRIVE-BY-ACTIVE SITE. QUESTIONNAIRE RECEIVED.SITE SCREENING DONE.NEED MORE INFORMATION.Site Screening completed. County provided oversight of investigation and remediation in 1991 & 1992. Refer site to County.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1981-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1995-07-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-03-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

NY MANIFEST:

Document ID:	NYB2633598
Manifest Status:	Completed copy
Trans1 State ID:	10222PNY
Trans2 State ID:	Not reported
Generator Ship Date:	930126
Trans1 Recv Date:	930126
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	930209
Part A Recv Date:	930211
Part B Recv Date:	930219
Generator EPA ID:	CAD073772030
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Quantity:	00014
Units:	P - Pounds
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Year:	93
Manifest Tracking Num:	Not reported
Import Ind:	Not reported
Export Ind:	Not reported
Discr Quantity Ind:	Not reported
Discr Type Ind:	Not reported
Discr Residue Ind:	Not reported
Discr Partial Reject Ind:	Not reported
Discr Full Reject Ind:	Not reported
Manifest Ref Num:	Not reported
Alt Fac RCRA Id:	Not reported
Alt Fac Sign Date:	Not reported
Mgmt Method Type Code:	Not reported
EPA ID:	CAD073772030
Facility Name:	SOUTHERN PACIFICTRANSPORTATION
Facility Address:	401 I STREET
Facility City:	SACRAMENTO
Facility Address 2:	Not reported
Country:	USA
County:	Not reported
Mailing Name:	SOUTHERN PACIFICTRANSPORTATION
Mailing Contact:	JIM DIEL
Mailing Address:	401 I STREET
Mailing Address 2:	Not reported
Mailing City:	SACRAMENTO
Mailing State:	CA
Mailing Zip:	Not reported
Mailing Zip4:	Not reported
Mailing Country:	USA
Mailing Phone:	916-781-5217

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39 **SPRR-SACRAMENTO LOCOMOTIVE** **Sacramento Co. CS** **S104795582**
401 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	DT002
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	R
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000635
Case Type:	FAUX
Case Closed:	N
Date Closed:	**Not reported**

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - LAGOON** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **DEED** **ENVIROSTOR** **HIST Cal-Sites**	**S105954434** **N/A**

AWP:

AWP Facility ID:	34400008
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - LAGOON
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400008
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Funding:	Responsible Party
Latitude:	38.5919493975904
Longitude:	-121.498025
Alias Name:	34400004
	UP, DOWNTOWN SAC - LAGOON
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400008
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - LAGOON
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and

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UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site

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UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE

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UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300

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UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

	2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	1,4-Dioxane
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: ACTIVE
Deed Date(s): 07/11/01

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 40
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400008
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Active
Status Date: 1992-06-03 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5919493975904
Longitude: -121.498025

Alias Name:	34400004
	UP, DOWNTOWN SAC - LAGOON
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400008
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - LAGOON
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300 2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Potenital Description: Tetrachloroethylene (PCE)
Potenital Description: TPH-diesel
Potenital Description: TPH-gas
Potenital Description: TPH-MOTOR OIL
Potenital Description: 1,1,1-Trichloroethane (TCA)
Potenital Description: Trichloroethylene (TCE)
Potenital Description: Vinyl chloride
Potenital Description: 1,4-Dioxane
Potenital Description: Ethylbenzene
Potenital Description: Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description: Acenaphthene
Potenital Description: Anthracene
Potenital Description: Benz[a]anthracene
Potenital Description: Benzo[b]fluoranthene
Potenital Description: Benzo[k]fluoranthene
Potenital Description: Benzo[a]pyrene
Potenital Description: Chrysene
Potenital Description: Dibenz[ah]anthracene
Potenital Description: Fluoranthene
Potenital Description: Fluorene
Potenital Description: Indeno[1,2,3-cd]pyrene
Potenital Description: Naphthalene
Potenital Description: Pyrene
Potenital Description: Toluene
Potenital Description: Xylenes
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400008
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - LAGOON
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD** **LUST** **S101300908**
401 I ST **Cortese** **N/A**
SACRAMENTO, CA **WMUDS/SWAT**
SLIC
EMI

LUST:
Region: STATE
Case Type: Drinking Water Aquifer affected
Cross Street: Not reported
Enf Type: None Taken
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global Id: T0606700084
Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 2000-04-28 00:00:00
Discover Date: Not reported
Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1987-07-31 00:00:00
Review Date: 2000-04-28 00:00:00
Enter Date: 1988-09-06 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: SOUTHERN PACIFIC TRANSPO
RP Address: Not reported
Interim: Not reported
Oversight Prgm: LUFT
MTBE Class: *

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: VJF
Staff Initials: DWB
Lead Agency: Regional Board
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 340118
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: TWO RIVERS RV PARK
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: W0603900814
Waste Disch Assigned Name: 2000814-001GEN
Summary: SEE SLIC FOR FILES & REPORTS

LUST:
Region: 5
Case Number: 340118
Staff Initials: VJF
Substance: GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Case Closed
Lead Agency: Regional
Program: LUFT
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 401 I ST

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Region: CORTESE
Facility Addr2: Not reported

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Not reported
Primary Waste:	Contaminated Soil
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Private
Agency Name:	SO. PAC. TRANSPORTATION CO.
Agency Department:	Not reported
Agency Address:	1 MARKET PLAZA
Agency City,St,Zip:	SAN FRANCISCO CA 94105
Agency Contact:	MARK RANSOM
Agency Telephone:	4155411495
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	Not reported
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	5S
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	4011
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	True
Solid Waste Assessment Test Program:	False
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	True
Department of Defence:	False
Solid Waste Assessment Test Program:	Not reported
Threat to Water Quality:	Not reported
Sub Chapter 15:	False
Regional Board Project Officer:	AMM
Number of WMUDS at Facility:	1

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Section Range: Not reported
RCRA Facility: No
Waste Discharge Requirements: Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire.
Self-Monitoring Rept. Frequency: Monthly Submittal
Waste Discharge System ID: 5A342000N01
Solid Waste Information ID: Not reported

SLIC:
Region: STATE
Global Id: SL205072992
Assigned Name: SLICSITE
Lead Agency Contact: STEVEN W. MEEKS
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SL205072992
Responsible Party: UNION PACIFIC RAILROAD COMPANY
Recent Dtw: 14.5
Substance Released: CR, MET, PET, SVO, VOC
Facility Status: Not reported

SLIC:
Region: 5
Facility Status: R I/FS/REM
Unit: Facility is a Spill or site
Pollutant: VOCs ,TPH, metals
Lead Agency: WTE
Date Filed: / /
Report Date: / /
Date Added: Not reported
Date Closed: Not reported

EMI:
Year: 1987
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 55
Reactive Organic Gases Tons/Yr: 35
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	17
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

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39 **SP, SAC. - BATTERY SHOP** **CA BOND EXP. PLAN** **S100833177**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad/Southern Pacific Transportation Co.
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver/San Francisco, CO/CA
Project Revenue Source Desc:	The Department has budgeted $50,000 for oversight of the responsible parties cleanup activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	The site encompasses three RCRA sites under one Court Order. The Court Order time schedule was included in an Enforceable Agreement dated June 2, 1988. These entail (a) a battery storage and disposal area (including dry well disposal), (b) a 2000 square foot drum storage area (containing solvents) and (c) a grit blast waste pile area (containing over 3100 cubic yards of sand).
Hazardous Waste Desc:	Contaminants include (a) copper, lead and petroleum hydrocarbons at the grit blast area, (b) lead and acids at the battery storage and disposal area, and (c) lead and organic compounds at the drum storage area.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact at all three locations. Potential receptors include humans, mammals, birds and freshwater fish. The site is within one half mile of the Sacramento and American Rivers, and seasonal fluctuation of shallow ground water direction has been confirmed.
Site Activity Status:	A third round of soil and ground water sampling was completed in September, 1988. Results from these investigations will be used to modify the analysis of remedial alternatives presented in March, 1988. A Court Order was signed July 30, 1987. The Order set a time schedule for a combined RAP/RCRA Closure. The time schedule in the Court Order was included in an enforceable agreement with DHS dated June 2, 1988. As an interim remedial measure it is proposed to centralize contaminated soils from the Battery Shop, Drum Storage and Sand Pile sites. Stockpiled wastes will be tarped. Drainage will also be collected down slope. Wastes will be stockpiled above visqueen to prevent percolation.

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39 **SP, SAC - BATTERY SHOP YARD** **RESPONSE** **S100351390**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34360065
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-21 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5866983935742
Longitude:	-121.502530555556
Alias Name:	34400004 CAD073772030 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION COMPANY SP-SAC - BATTERY SHOP SP, SAC - BATTERY SHOP YARD SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 34360065 SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number EPA Identification Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10097, 10119, 30013, 30407
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	Lead
Potenital Description:	Nickel
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	BATTERY STORAGE

DEED:
Area: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 06/28/90

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34360065
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-21 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5866983935742
Longitude: -121.502530555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION COMPANY	Alternate Name
SP-SAC - BATTERY SHOP	Alternate Name
SP, SAC - BATTERY SHOP YARD	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
34360065	Envirostor ID Number
SP-SAC - LOCOMOTIVE WORKS	Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: 5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Management Required Desc: Not reported
Potential: 10097, 10119, 30013, 30407
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * ACID SOLUTION 2>PH WITH METALS
Potenital Description: Lead
Potenital Description: Nickel
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: BATTERY STORAGE

HISTORICAL CAL-SITES:
Facility ID: 34360065
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06211990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 36
SIC Name: MANU - ELECTRONIC & OTHER ELECTRIC EQUIP
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

Map ID	Site	Database(s)	EPA ID Number
39	**SP, SAC - SAND PILES** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **ENVIROSTOR** **HIST Cal-Sites**	**S100351371** **N/A**

RESPONSE:

Facility ID:	34320031
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-22 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5857369477911
Longitude:	-121.499380555556
Alias Name:	SOUTHERN PACIFIC TRANSPORTATION CO 34400004 SP, SAC - SAND PILES 34320031 100139
Alias Type:	Envirostor ID Number Project Code (Site Code) Envirostor ID Number Alternate Name Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1989-11-24 00:00:00
Confirmed:	30013
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34320031
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-22 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5857369477911
Longitude: -121.499380555556
Alias Name: SOUTHERN PACIFIC TRANSPORTATION CO
34400004
SP, SAC - SAND PILES
34320031
100139
Alias Type: Envirostor ID Number
Project Code (Site Code)
Envirostor ID Number
Alternate Name
Alternate Name
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1990-06-22 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Completed Document Type:	Remedial Action Completion Report
Completed Date:	1989-11-24 00:00:00
Confirmed:	30013
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

HISTORICAL CAL-SITES:

Facility ID:	34320031
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	06221990
Status:	CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name:	CERTIFIED
Lead Agency:	Not reported
Lead Agency:	N/A
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Unknown
SIC Code:	32
SIC Name:	MANU - STONE, CLAY & GLASS PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
Staff Member Responsible for Site:	SGOSS
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported
Region Water Control Board Name:	Not reported
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	09
State Senate District Code:	06

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SP, SAC. - PONDS & DITCH** **CA BOND EXP. PLAN** **S100833178**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Southern Pacific Transportation Company/Denver and Rio Grande Railroad
Project Revenue Source Addr:	Southern Pacific Building, 1 Market Plaza
Project Revenue Source City,St,Zip:	San Francisco/Denver, CA/CO 94105
Project Revenue Source Desc:	DHS has budgeted $50,000 for oversight activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	Industrial waste water disposal ponds and an industrial waste water conveyance ditch are the focal points of this site investigation. A RAP/RCRA closure is required.
Hazardous Waste Desc:	Sludge and soil samples analyzed contained high concentrations of copper, lead, zinc, 1,1,1-trichloroethane, trichloroethane, tetrachloroethene, naphthalene, and bis (2-ethylhexyl) phthalate. Ground water contaminants include chromium, methylene chloride, 1,1-dichloroethane (ethylene chloride), and trans-acetylene dichloride (trans-1,2-dichloroethane).
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds, insects, freshwater fish, nematodes, soil bacteria and grasses common to the Central Valley. The City of Sacramento has a domestic water intake from the Sacramento River located approximately one mile north of the site. Ground water is used by the State Printing Plant and Crystal Dairy for industrial purposes just north of the site. Wells serving Bannon Street residents have been tested for organics, metals and coliform organisms. Results showed all wells uncontaminated by organics and metals.
Site Activity Status:	Sludge from both the ponds and ditch was excavated and disposed of at a Class I landfill in 1984 and 1985 as IRMs. Three rounds of remedial investigation have been completed at the ponds and ditch, the most recent in May, 1987. Bench scale testing of soil solidification and soil washing is now underway. Until a final design is approved, the extraction well near the ponds and ditch has been turned off. A final feasibility study (FS) was received in October, 1988.

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39 **SP, SAC - SACRAMENTO STATION** **RESPONSE** **S101481755**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34400006
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified
Status Date:	1994-06-02 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5847502008032
Longitude:	-121.500730555556
Alias Name:	34400004
	CAD073772030
	P14013
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	SP, SAC - SACRAMENTO STATION
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	34400006
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

	laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1989-02-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10002, 10097, 10196, 30013
Potenital Description: * HALOGENATED ORGANIC COMPOUNDS
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * UNSPECIFIED OIL CONTAINING WASTE
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAILROAD RIGHT OF WAY

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400006
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Certified
Status Date: 1994-06-02 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5847502008032
Longitude: -121.500730555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
P14013	PCode
SACRAMENTO RAILYARD FACILITY	
SOUTHERN PACIFIC TRANSPORTATION CO	
SP, SAC - SACRAMENTO STATION	
SP-SAC - OVERALL SITE	
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	
100139	
34400006	
SP-SAC - LOCOMOTIVE WORKS	

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Deed Restriction / Land Use Covenant
Completed Date: 1994-05-19 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1994-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1989-02-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1988-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAILROAD RIGHT OF WAY

HISTORICAL CAL-SITES:

Facility ID:	34400006
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	06021994
Status:	CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Status Name: CERTIFIED
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UP, DOWNTOWN SAC - CENTRAL SHOPS** **CHMIRS** **S105954432**
401 I STREET **RESPONSE** **N/A**
SACRAMENTO, CA 95814 **DEED**
ENVIROSTOR
HIST Cal-Sites

CHMIRS:
OES Incident Number: 03-3608
OES notification: 7/18/200302:53:32 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	Union Pacific Railroad
Incident Date:	7/18/200312:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Train Derailment
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	1
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported
OES Incident Number:	05-3945
OES notification:	7/1/200505:52:41 PM
OES Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Amtrak
Incident Date:	7/1/200512:00:00 AM
Admin Agency:	Sacramento City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Diesel
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Gallons:	3
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported

AWP:

AWP Facility ID:	34400004
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	01011983
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	CV
RWQCB Associated With Site:	CENTRAL VALLEY
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	6
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400007
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
Current Status Date:	01011990
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400009
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400010
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400004
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	6
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Status:	Active
Status Date:	1983-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5874345180723
Longitude:	-121.500845
Alias Name:	CAD073772030
	34400010
	P11077
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400004
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - CENTRAL SHOP
Alias Type:	EPA Identification Number
	Envirostor ID Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC’s request for an indoor air evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required.

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1980-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1984-03-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-05-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	2005-07-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2005-12-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2002-10-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-08-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-03-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000 ,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,304 3,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,30 50,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400005
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004 CAD073772030 P14029 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400005 SP-SAC - LOCOMOTIVE WORKS SP-SAC - OVERALL SITE SP-SAC - PONDS AND DITCH UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - PONDS AND DITCH
Alias Type:	Envirostor ID Number EPA Identification Number PCode Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane
Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400007
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	50

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,3026-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
	30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP

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UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

Facility ID:	34400009
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION COMPANY SP, SAC - CAR SHOP NINE 34400009 SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and

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UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400010
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS SP-SAC OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - CENTRAL CORRIDOR
Alias Type:	EPA Identification Number Envirostor ID Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE
Status:	ACTIVE
Deed Date(s):	07/11/01

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 6
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400004
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Active
Status Date: 1983-01-01 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5874345180723
Longitude: -121.500845

Alias Name:	Alias Type:
CAD073772030	EPA Identification Number
34400010	Envirostor ID Number
P11077	PCode
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION CO	Alternate Name
34400004	Alternate Name
SP-SAC - LOCOMOTIVE WORKS	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
SP, SAC - CENTRAL SHOP	Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC's request for an indoor air

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required. This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type: Consent Order
Completed Date: 1988-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Discovery
Completed Date: 1980-01-07 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Responsible Agency Review
Completed Date: 2000-02-16 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 2003-02-21 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 1987-02-09 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 1984-03-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1995-05-12 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 2005-07-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Human Health Risk Assessment Report
Completed Date: 2005-12-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 2002-10-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Implementation Workplan
Completed Date: 2003-02-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1995-08-08 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 1995-04-27 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1993-03-08 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Participation Plan / Community Relations Plan

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000 ,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,304 3,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,30 50,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400005
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004
	CAD073772030
	P14029
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400005
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	SP-SAC - PONDS AND DITCH

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - PONDS AND DITCH

Alias Type: Envirostor ID Number
EPA Identification Number
PCode
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Notice of Exemption
Completed Date: 2003-05-07 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1996-01-12 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Deed Restriction / Land Use Covenant
Completed Date: 1994-05-19 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1987-07-28 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1984-04-19 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 2000-03-10 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 2003-05-07 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan
Completed Date: 1989-06-30 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1991-06-27 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1991-06-20 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Participation Plan / Community Relations Plan
Completed Date: 1989-02-28 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation / Feasibility Study
Completed Date: 1987-12-31 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	50
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400007
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304 1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,30 26-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
	30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400009
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION COMPANY
	SP, SAC - CAR SHOP NINE
	34400009
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Project Code (Site Code)
Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400010
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SP-SAC OVERALL SITE
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - CENTRAL CORRIDOR

Alias Type:	EPA Identification Number
	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400004
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01011983
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: CV
Region Water Control Board Name: CENTRAL VALLEY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400005
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01121996
Status: COM - CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED REMEDIATION CONTINUES
Status Name: CERTIFIED / OPERATION & MAINTENANCE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400007
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
State Senate District: 01011990
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400009
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400010
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SUSD** **Sacramento Co. CS** **S104795583**
425 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	R094
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	L
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000636
Case Type:	FAUX
Case Closed:	Y
Date Closed:	**Not reported**

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39 **UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **RESPONSE** **S107737490**
400 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

RESPONSE:

Facility ID:	70000034
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034 100139
Alias Type:	Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	70000034
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034
	100139
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1008984943** **N/A**

Manufactured Gas Plants:

A new area was added in 2003, entitled the Manufactured Gas Plant (MGP) Area, which was established after discovering remnants of an MGP on the western boundary of the northern shops area during soil remediation activities in the Northern Shops area.

39	**UP, DOWNROWN SAC-MANUFACTURED GAS PLAN** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1009508587** **N/A**

FOCUS MAP 10 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SACRAMENTO	1003878554	SMUD NORTH CITY SUBSTA	20TH & N B STS	95814	CERC-NFRAP
SACRAMENTO	1003878854	SACRAMENTO MUNICIPAL LDFL	28TH & A ST	95814	CERC-NFRAP
SACRAMENTO	1010082283	HERITAGE DRY CLEANERS	13100 BLOCK OF MONO WAY	95814	CERCLIS
SACRAMENTO	1003879067	UNION CARBIDE CORP-LINDE DIV	CARBIDE CT	95814	CERC-NFRAP
SACRAMENTO	S105454993	TRI STAR AUTO CARE	701 DOS RIOS ST UNIT B	95814	HAZNET, Sacramento Co. ML
SACRAMENTO	S103678764	SMUD, FRONT & T STREETS	FRONT / T ST	95814	HAZNET, Cortese
SACRAMENTO	S104795887	DENNIS LESEA PAINT & BODY	521 INDIANA AVE F	95833	Sacramento Co. ML
SACRAMENTO	1003878696	FORMER CITY LDFL	NW OF 28TH & N B STS	95816	CERC-NFRAP
SACRAMENTO	S101481621	CALTRANS, I-5 Q STREET OFF-RAMP	I-5 Q STREET OFF-RAMP	95814	RESPONSE, DEED, ENVIROSTOR, H Cal-Sites
SACRAMENTO	S106162803	FORMER GASCO STATION #758	505 30TH STREET	95816	LUST

Focus Map 11



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 11 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
W SACRAMENTO	U003850805	CARGILL INC	STONE BLVD-PORT OF SACRAMENTO	95691	UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	1007370116	CALTRANS WORKERS MEMORIAL BRIDGE	INTERSTATE 80 AT POSTMILE 11.1	95691	RCRA-SQG, HAZNET
WEST SACRAMENTO	U001614227	PORT OF SACRAMENTO-TERMINAL	BASE OF HARBOR BLVD.	95691	HIST UST
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	1001217575	WORLD ENVIRONMENTAL AND ENERGY INC	3208 W CAPITOL AVE EASTSIDE	95691	PADS, RCRA-SQG, FINDS
WEST SACRAMENTO	U003850800	CAL-TRANS	W CAPITOL AVE	95691	UST
WEST SACRAMENTO	S107138462	TEXACO SERVICE STATION (FORMER)	WEST CAPITOL / THIRD STREET	95691	LUST
WEST SACRAMENTO	1010082369	EVERGREEN VACANT PARCEL 1	EVERGREEN AVENUE	95691	US BROWNFIELDS
WEST SACRAMENTO	1010082370	EVERGREEN VACANT PARCEL 2	EVERGREEN AVENUE	95691	US BROWNFIELDS
WEST SACRAMENTO	U001614223	NORCAL CARDLOCK SITE 3	8022 EVERGREEN AVE.	95691	HIST UST
WEST SACRAMENTO	U003966385	SACRAMENTO AUTO TRUCK CO	525 GALVESTON ST	95691	UST
WEST SACRAMENTO	S105694082	FOOD & LIQUOR #119 (KAYO)	731 POPLAR ST (AKA: 1840 WEST CAPITOL)	95691	LUST
WEST SACRAMENTO	U001614172	CARGILL INC.	PORT OF SACRAMENTO-STONE BLVD	95691	HIST UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST

Focus Map 12



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

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N

0 1/8 1/4

Scale in Miles

FOCUS MAP 12 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	0
CORRACTS	0
RCRA TSD	0
RCRA Lg. Quan. Gen.	0
RCRA Sm. Quan. Gen.	0
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	0
RAATS	0
STATE AND LOCAL RECORDS	
Hist Cal-Sites	0
CA Bond Exp. Plan	0
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	0

FOCUS MAP 12 SUMMARY

Database	Total Plotted
Cortese	0
SWRCY	0
LUST	0
CA FID UST	0
SLIC	0
UST	0
HIST UST	0
AST	0
LIENS	0
SWEEPS UST	0
CHMIRS	0
Notify 65	0
DEED	0
VCP	0
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	0
HAZNET	0
EMI	0
HAULERS	0
ENVIROSTOR	2

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	0

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number
55	**FABRICARE ONE HOUR MARTINIZING #2** **827 JEFFERSON BOULEVARD** **WEST SACRAMENTO, CA 95691**	**ENVIROSTOR**	**S107736310** **N/A**

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57720005
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.4780555555556
Longitude:	-121.580833333333
Alias Name:	57720005
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number
58	**PAYLESS CLEANERS (2)** **1351 MERKLEY AVENUE** **WEST SACRAMENTO, CA 95691**	**ENVIROSTOR**	**S101482950** **N/A**

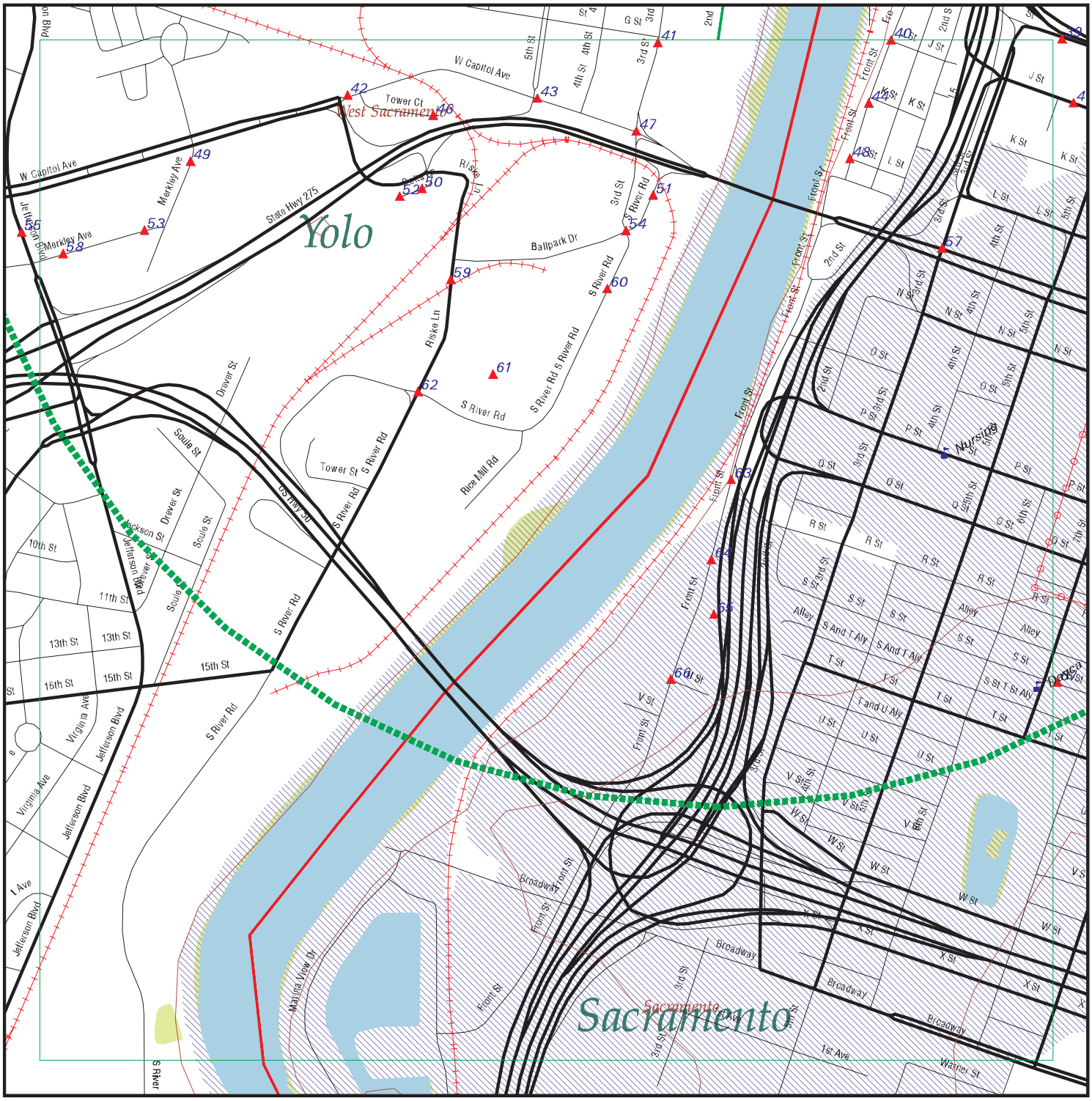
ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57720002
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5797222222222
Longitude:	-121.524444444444
Alias Name:	57720002
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

FOCUS MAP 12 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
SACRAMENTO	S101630671	EXXON SERVICE STATION	905 W PARK ST	95691	CA FID UST, SWEEPS UST
SACRAMENTO	U001614188	EXXON SERVICE STATION	905 PARK STREET W.	95691	HIST UST
SOUTHPORT	U001199955	PUBLIC WORKS BUILDING	210 11TH ST	95691	UST
W SACRAMENTO	U003850805	CARGILL INC	STONE BLVD-PORT OF SACRAMENTO	95691	UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	U001614227	PORT OF SACRAMENTO-TERMINAL	BASE OF HARBOR BLVD.	95691	HIST UST
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	U003850915	P G & E - WINCHESTER LK	BURROWS/W OF JEFFERSON	95691	UST
WEST SACRAMENTO	1001217575	WORLD ENVIRONMENTAL AND ENERGY INC	3208 W CAPITOL AVE EASTSIDE	95691	PADS, RCRA-SQG, FINDS
WEST SACRAMENTO	U003850800	CAL-TRANS	W CAPITOL AVE	95691	UST
WEST SACRAMENTO	S107138462	TEXACO SERVICE STATION (FORMER)	WEST CAPITOL / THIRD STREET	95691	LUST
WEST SACRAMENTO	1009311588	WEST SACRAMENTO DRAINAGE DITCH	EASEMENT AT END OF PARCELS ALONG MAPLE	95691	US BROWNFIELDS
WEST SACRAMENTO	1010082369	EVERGREEN VACANT PARCEL 1	EVERGREEN AVENUE	95691	US BROWNFIELDS
WEST SACRAMENTO	1010082370	EVERGREEN VACANT PARCEL 2	EVERGREEN AVENUE	95691	US BROWNFIELDS
WEST SACRAMENTO	U001614223	NORCAL CARDLOCK SITE 3	8022 EVERGREEN AVE.	95691	HIST UST
WEST SACRAMENTO	S105629031	BRIDGEWAY ISLAND ELEMENTARY	GOLDEN GATE DR/HALF MOON BAY CIRCLE/MARSHALL RD	95691	SCH, ENVIROSTOR
WEST SACRAMENTO	U004003829	NOR CAL ASSOC/KAUFMAN MANIKAS	JEFFERSON AT MARSHALL	95691	UST
WEST SACRAMENTO	U004004463	WILLOW POINT RANCH	JEFFERSON BLVD & WILLOW POINT	95691	UST
WEST SACRAMENTO	S101482951	TOMLIN'S SUNSHINE CLEANERS	612 MICHIGAN BLVD	95691	ENVIROSTOR
WEST SACRAMENTO	S105694082	FOOD & LIQUOR #119 (KAYO)	731 POPLAR ST (AKA: 1840 WEST CAPITOL)	95691	LUST
WEST SACRAMENTO	U001614172	CARGILL INC.	PORT OF SACRAMENTO-STONE BLVD	95691	HIST UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST
WEST SACRAMENTO	S106127651	WASHINGTON UNIFIED SCHOOL DISTRICT	931 WESTACRE ROAD	95691	LUST

Focus Map 13



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

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0 1/8 1/4

Scale in Miles

FOCUS MAP 13 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	1
CERC-NFRAP	2
CORRACTS	1
RCRA TSD	1
RCRA Lg. Quan. Gen.	1
RCRA Sm. Quan. Gen.	2
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	1
US BROWNFIELDS	3
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	3
RAATS	1
STATE AND LOCAL RECORDS	
Hist Cal-Sites	8
CA Bond Exp. Plan	4
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	1
WMUDS/SWAT	1

FOCUS MAP 13 SUMMARY

Database	Total Plotted
Cortese	6
SWRCY	0
LUST	6
CA FID UST	0
SLIC	7
UST	3
HIST UST	0
AST	0
LIENS	0
SWEEPS UST	0
CHMIRS	2
Notify 65	0
DEED	7
VCP	2
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	8
HAZNET	6
EMI	3
HAULERS	0
ENVIROSTOR	19

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	4

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number

39 **SP, SAC.-LOCOMOTIVE WORKS** **CA BOND EXP. PLAN** **S100833179**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver, CO
Project Revenue Source Desc:	The Department has budgeted $100,000 for oversight activities. The RP has agreed in the enforceable agreement to pay DHS oversight costs on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	This is an old locomotive works for the cleaning and refurbishing of coal and diesel engines and railcars. The works were established in 1865.
Hazardous Waste Desc:	Known contaminants in shallow ground water include heavy metals, petroleum hydrocarbons, inorganic solvents and organic solvents. Lead is a heavy metal of particular concern. Benzene is a likely petroleum hydrocarbon contaminant. Kerosene is a likely organic solvent contaminant. Another organic solvent likely to have contaminated the site is 1,1,1-trichloroethane.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds and freshwater fish. The site is located within one half mile of the Sacramento and American Rivers. Shallow ground water flow is predominantly to the East. Wells serving Bannon Street residents have been tested for organics and metals. Results showed all wells to be uncontaminated by organics and metals.
Site Activity Status:	An enforceable agreement has been implemented between DHS and the RP. A scoping document has been submitted by the RP. A work plan and schedule for investigation and cleanup was submitted October, 1988. A number of underground tanks have already been removed and have received closure approval by the RWQCB.

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39 **UP, DOWNTOWN SAC - REDEVELOPMENT** **VCP** **S106568277**
401 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

VCP:

Facility ID:	34400011
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100552
Assembly:	09
Senate:	06
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	38.5871791164659 / -121.499330555556
Alias Name:	0737720230 SOUTHERN PACIFIC TRANSPORTATION CO. 34400011 100552 SP, SAC - REDEVELOPMENT

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Division Branch:	Central California
Facility ID:	34400011
Site Code:	100552
Assembly:	09
Senate:	06
Special Program:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5871791164659
Longitude:	-121.499330555556
Alias Name:	0737720230
	SOUTHERN PACIFIC TRANSPORTATION CO.
	34400011
	100552
	SP, SAC - REDEVELOPMENT
Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

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39 **SOUTHERN PACIFIC TRANS CO** **FINDS** **1000409221**
401 I ST **RCRA-LQG** **CAD073772030**
SACRAMENTO, CA 95814 **RCRA-TSDF**
RAATS
SLIC
CORRACTS
CERC-NFRAP
Sacramento Co. CS
ENVIROSTOR
NY MANIFEST

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

RCRAInfo Corrective Action Summary:

Event:	Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
Event Date:	01/09/2004
Event:	Igration of Contaminated Groundwater under Control, More information is needed to make a determination.
Event Date:	01/10/2001
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date:	01/10/2001
Event:	Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Event Date:	04/06/1998
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date:	04/06/1998
Event:	Certification Of Remedy Completion Or Construction Completion
Event Date:	06/21/1994
Event:	CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date:	04/25/1994
Event:	Stabilization Measures Evaluation,This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
Event Date:	04/25/1994
Event:	Stabilization Measures Implemented, Groundwater extraction and treatment (e.g., to achieve groundwater containment, to achieve MCL).
Event Date:	10/20/1993
Event:	Stabilization Construction Completed
Event Date:	04/05/1993
Event:	Stabilization Measures Implemented, Primary measure is source removal and/or treatment (e.g., soil or waste excavation, in-situ soil treatment, off-site treatment).
Event Date:	01/15/1993
Event:	Corrective Measures Design Approved
Event Date:	06/30/1992
Event:	RFI Workplan Approved
Event Date:	01/27/1992
Event:	RFI Workplan Approved
Event Date:	12/17/1991
Event:	RFI Workplan Approved
Event Date:	10/18/1991
Event:	Date For Remedy Selection (CM Imposed)
Event Date:	12/07/1989
Event:	CMS Approved
Event Date:	04/30/1989
Event:	RFI Approved
Event Date:	02/28/1989
Event:	RFI Workplan Approved
Event Date:	01/31/1989
Event:	CMS Workplan Approved
Event Date:	01/31/1989
Event:	CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date:	08/08/1988

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Event: RFI Imposition
Event Date: 06/02/1988

RCRAInfo:
Owner: NAME NOT REPORTED
(415) 555-1212
EPA ID: CAD073772030

Contact: Not reported

Classification: Large Quantity Generator, TSDF
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 262.50-60
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 264.10-18.B
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.30-34.C
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.10-12.A
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.90-94.F
Area of Violation: TSD-GOUNDWATER MONITORING REQUIREMENTS
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.170-177.I
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/19/1991
Actual Date Achieved Compliance: 06/01/1991

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 05/01/1991
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/12/1990
Actual Date Achieved Compliance: 06/01/1990

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 04/26/1990
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 01/30/1989
Actual Date Achieved Compliance: 04/13/1989

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/16/1989
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/06/1987
Actual Date Achieved Compliance: 12/28/1987

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/16/1987
Penalty Type: Not reported

Regulation Violated: 264.140-150.H
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 09/19/1986
Actual Date Achieved Compliance: 12/16/1987

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
Final Monetary Penalty	11/8/1991	70000	STATE
Proposed Monetary Penalty	11/8/1991	125500	STATE

There are 11 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19941114
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19920725
	TSD-GOUNDWATER MONITORING REQUIREMENTS	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19910601
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19900601

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19890413
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19871228
Non-Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19871216

SLIC:

Region:	STATE
Global Id:	SLT5S2473286
Assigned Name:	SLICSITE
Lead Agency Contact:	CORI CONDON
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	SLT5S247
Responsible Party:	SAC. HOUSING & REDEVELOPMENT AGENCY
Recent Dtw:	Not reported
Substance Released:	VOC
Facility Status:	**Case Open**

CORRACTS:

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/09/2004
Action:	CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA750IN - Migration of Contaminated Groundwater under Control, More information is needed to make a determination
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	CENTRAL SHOPS AREA
Actual Date:	01/15/1993
Action:	CA600SR - Stabilization Measures Implemented, Primary measure is source removal and/or treatment
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	SOUTH PLUME AREA
Actual Date:	01/27/1992
Action:	CA150 - RFI Workplan Approved
NAICS Code(s):	Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA300 - CMS Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 02/28/1989
Action: CA200 - RFI Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 04/05/1993
Action: CA650 - Stabilization Construction Completed
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 04/30/1989
Action: CA350 - CMS Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/02/1988
Action: CA100 - RFI Imposition
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/21/1994
Action: CA550 - Certification Of Remedy Completion Or Construction Completion
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/30/1992
Action: CA450 - Corrective Measures Design Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 08/08/1988
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 10/18/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SOUTH PLUME AREA
Actual Date: 10/20/1993
Action: CA600GW - Stabilization Measures Implemented, Groundwater extraction and treatment
NAICS Code(s): Not reported

EPA ID: CAD073772030

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 12/07/1989
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: LAGOON/NORTH PLUME AREA
Actual Date: 12/17/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

CERC-NFRAP:
Site ID: 0901569
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: SACRAMENTO LOCOMOTIVE WORKS
Alias Address: Not reported
CA
Alias Name: UNION PACIFIC RR - SACRAMENTO
Alias Address: Not reported
CA
Alias Name: SO PACIFIC
Alias Address: Not reported
CA
Alias Name: SOUTHERN PACIFIC LOCOMOTIVE WORK
Alias Address: Not reported
CA
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/01/1980
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: 05/01/1984
Date Completed: 02/01/1985
Priority Level: Low

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Date Completed: 05/01/1988
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Sacramento Co. CS:
Region: SACRAMENTO
State Site Number: 0379
Lead Staff: ERIKSON, S.
Lead Agency: L
Remedial Action Taken: 1
Substance: Heater Fuel
Date Reported: 6/4/1991
Facility Id: RO0001105
Case Type: Other ground water affected
Case Closed: Y
Date Closed: 7/21/1997

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Central California
Facility ID: 34720169
Site Code: Not reported
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 1995-07-21 00:00:00
Restricted Use: NO
Funding: Not reported
Latitude: 38.5713888888889
Longitude: -121.505833333333
Alias Name: 34720169
Alias Type: Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Comments:	FACILITY IDENTIFIED INACTIVE #240. FACILITY DRIVE-BY DRIVE-BY-ACTIVE SITE. QUESTIONNAIRE RECEIVED.SITE SCREENING DONE.NEED MORE INFORMATION.Site Screening completed. County provided oversight of investigation and remediation in 1991 & 1992. Refer site to County.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1981-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1995-07-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-03-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

NY MANIFEST:

Document ID:	NYB2633598
Manifest Status:	Completed copy
Trans1 State ID:	10222PNY
Trans2 State ID:	Not reported
Generator Ship Date:	930126
Trans1 Recv Date:	930126
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	930209
Part A Recv Date:	930211
Part B Recv Date:	930219
Generator EPA ID:	CAD073772030
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Quantity:	00014
Units:	P - Pounds
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Year:	93
Manifest Tracking Num:	Not reported
Import Ind:	Not reported
Export Ind:	Not reported
Discr Quantity Ind:	Not reported
Discr Type Ind:	Not reported
Discr Residue Ind:	Not reported
Discr Partial Reject Ind:	Not reported
Discr Full Reject Ind:	Not reported
Manifest Ref Num:	Not reported
Alt Fac RCRA Id:	Not reported
Alt Fac Sign Date:	Not reported
Mgmt Method Type Code:	Not reported
EPA ID:	CAD073772030
Facility Name:	SOUTHERN PACIFICTRANSPORTATION
Facility Address:	401 I STREET
Facility City:	SACRAMENTO
Facility Address 2:	Not reported
Country:	USA
County:	Not reported
Mailing Name:	SOUTHERN PACIFICTRANSPORTATION
Mailing Contact:	JIM DIEL
Mailing Address:	401 I STREET
Mailing Address 2:	Not reported
Mailing City:	SACRAMENTO
Mailing State:	CA
Mailing Zip:	Not reported
Mailing Zip4:	Not reported
Mailing Country:	USA
Mailing Phone:	916-781-5217

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39 **SPRR-SACRAMENTO LOCOMOTIVE** **Sacramento Co. CS** **S104795582**
401 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	DT002
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	R
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000635
Case Type:	FAUX
Case Closed:	N
Date Closed:	**Not reported**

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - LAGOON** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **DEED** **ENVIROSTOR** **HIST Cal-Sites**	**S105954434** **N/A**

AWP:

AWP Facility ID:	34400008
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - LAGOON
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400008
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Funding:	Responsible Party
Latitude:	38.5919493975904
Longitude:	-121.498025
Alias Name:	34400004
	UP, DOWNTOWN SAC - LAGOON
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400008
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - LAGOON
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

	2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	1,4-Dioxane
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: ACTIVE
Deed Date(s): 07/11/01

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 40
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400008
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Active
Status Date: 1992-06-03 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5919493975904
Longitude: -121.498025

Alias Name:	34400004
	UP, DOWNTOWN SAC - LAGOON
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400008
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - LAGOON
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED

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UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300 2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Potenital Description: Tetrachloroethylene (PCE)
Potenital Description: TPH-diesel
Potenital Description: TPH-gas
Potenital Description: TPH-MOTOR OIL
Potenital Description: 1,1,1-Trichloroethane (TCA)
Potenital Description: Trichloroethylene (TCE)
Potenital Description: Vinyl chloride
Potenital Description: 1,4-Dioxane
Potenital Description: Ethylbenzene
Potenital Description: Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description: Acenaphthene
Potenital Description: Anthracene
Potenital Description: Benz[a]anthracene
Potenital Description: Benzo[b]fluoranthene
Potenital Description: Benzo[k]fluoranthene
Potenital Description: Benzo[a]pyrene
Potenital Description: Chrysene
Potenital Description: Dibenz[ah]anthracene
Potenital Description: Fluoranthene
Potenital Description: Fluorene
Potenital Description: Indeno[1,2,3-cd]pyrene
Potenital Description: Naphthalene
Potenital Description: Pyrene
Potenital Description: Toluene
Potenital Description: Xylenes
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400008
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - LAGOON
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD** **LUST** **S101300908**
401 I ST **Cortese** **N/A**
SACRAMENTO, CA **WMUDS/SWAT**
SLIC
EMI

LUST:
Region: STATE
Case Type: Drinking Water Aquifer affected
Cross Street: Not reported
Enf Type: None Taken
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global Id: T0606700084
Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 2000-04-28 00:00:00
Discover Date: Not reported
Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1987-07-31 00:00:00
Review Date: 2000-04-28 00:00:00
Enter Date: 1988-09-06 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: SOUTHERN PACIFIC TRANSPO
RP Address: Not reported
Interim: Not reported
Oversight Prgm: LUFT
MTBE Class: *

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: VJF
Staff Initials: DWB
Lead Agency: Regional Board
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 340118
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: TWO RIVERS RV PARK
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: W0603900814
Waste Disch Assigned Name: 2000814-001GEN
Summary: SEE SLIC FOR FILES & REPORTS

LUST:
Region: 5
Case Number: 340118
Staff Initials: VJF
Substance: GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Case Closed
Lead Agency: Regional
Program: LUFT
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 401 I ST

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Region: CORTESE
Facility Addr2: Not reported

WMUDS/SWAT:
Edit Date: Not reported
Complexity: Not reported
Primary Waste: Contaminated Soil
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Base Meridian: Not reported
NPID: Not reported
Tonnage: 0
Regional Board ID: Not reported
Municipal Solid Waste: False
Superorder: False
Open To Public: False
Waste List: False
Agency Type: Private
Agency Name: SO. PAC. TRANSPORTATION CO.
Agency Department: Not reported
Agency Address: 1 MARKET PLAZA
Agency City,St,Zip: SAN FRANCISCO CA 94105
Agency Contact: MARK RANSOM
Agency Telephone: 4155411495
Land Owner Name: Not reported
Land Owner Address: Not reported
Land Owner City,St,Zip: Not reported
Land Owner Contact: Not reported
Land Owner Phone: Not reported
Region: 5S
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description: Not reported
Facility Telephone: Not reported
SWAT Facility Name: Not reported
Primary SIC: 4011
Secondary SIC: Not reported
Comments: Not reported
Last Facility Editors: Not reported
Waste Discharge System: True
Solid Waste Assessment Test Program: False
Toxic Pits Cleanup Act Program: False
Resource Conservation Recovery Act: True
Department of Defence: False
Solid Waste Assessment Test Program: Not reported
Threat to Water Quality: Not reported
Sub Chapter 15: False
Regional Board Project Officer: AMM
Number of WMUDS at Facility: 1

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Section Range: Not reported
RCRA Facility: No
Waste Discharge Requirements: Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire.
Self-Monitoring Rept. Frequency: Monthly Submittal
Waste Discharge System ID: 5A342000N01
Solid Waste Information ID: Not reported

SLIC:
Region: STATE
Global Id: SL205072992
Assigned Name: SLICSITE
Lead Agency Contact: STEVEN W. MEEKS
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SL205072992
Responsible Party: UNION PACIFIC RAILROAD COMPANY
Recent Dtw: 14.5
Substance Released: CR, MET, PET, SVO, VOC
Facility Status: Not reported

SLIC:
Region: 5
Facility Status: R I/FS/REM
Unit: Facility is a Spill or site
Pollutant: VOCs ,TPH, metals
Lead Agency: WTE
Date Filed: / /
Report Date: / /
Date Added: Not reported
Date Closed: Not reported

EMI:
Year: 1987
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 55
Reactive Organic Gases Tons/Yr: 35
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	17
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

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39 **SP, SAC. - BATTERY SHOP** **CA BOND EXP. PLAN** **S100833177**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad/Southern Pacific Transportation Co.
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver/San Francisco, CO/CA
Project Revenue Source Desc:	The Department has budgeted $50,000 for oversight of the responsible parties cleanup activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	The site encompasses three RCRA sites under one Court Order. The Court Order time schedule was included in an Enforceable Agreement dated June 2, 1988. These entail (a) a battery storage and disposal area (including dry well disposal), (b) a 2000 square foot drum storage area (containing solvents) and (c) a grit blast waste pile area (containing over 3100 cubic yards of sand).
Hazardous Waste Desc:	Contaminants include (a) copper, lead and petroleum hydrocarbons at the grit blast area, (b) lead and acids at the battery storage and disposal area, and (c) lead and organic compounds at the drum storage area.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact at all three locations. Potential receptors include humans, mammals, birds and freshwater fish. The site is within one half mile of the Sacramento and American Rivers, and seasonal fluctuation of shallow ground water direction has been confirmed.
Site Activity Status:	A third round of soil and ground water sampling was completed in September, 1988. Results from these investigations will be used to modify the analysis of remedial alternatives presented in March, 1988. A Court Order was signed July 30, 1987. The Order set a time schedule for a combined RAP/RCRA Closure. The time schedule in the Court Order was included in an enforceable agreement with DHS dated June 2, 1988. As an interim remedial measure it is proposed to centralize contaminated soils from the Battery Shop, Drum Storage and Sand Pile sites. Stockpiled wastes will be tarped. Drainage will also be collected down slope. Wastes will be stockpiled above visqueen to prevent percolation.

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39 **SP, SAC - BATTERY SHOP YARD** **RESPONSE** **S100351390**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34360065
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-21 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5866983935742
Longitude:	-121.502530555556
Alias Name:	34400004 CAD073772030 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION COMPANY SP-SAC - BATTERY SHOP SP, SAC - BATTERY SHOP YARD SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 34360065 SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number EPA Identification Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10097, 10119, 30013, 30407
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	Lead
Potenital Description:	Nickel
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	BATTERY STORAGE

DEED:
Area: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 06/28/90

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34360065
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-21 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5866983935742
Longitude: -121.502530555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION COMPANY	Alternate Name
SP-SAC - BATTERY SHOP	Alternate Name
SP, SAC - BATTERY SHOP YARD	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
34360065	Envirostor ID Number
SP-SAC - LOCOMOTIVE WORKS	Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: 5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Management Required Desc: Not reported
Potential: 10097, 10119, 30013, 30407
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * ACID SOLUTION 2>PH WITH METALS
Potenital Description: Lead
Potenital Description: Nickel
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: BATTERY STORAGE

HISTORICAL CAL-SITES:
Facility ID: 34360065
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06211990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 36
SIC Name: MANU - ELECTRONIC & OTHER ELECTRIC EQUIP
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

Map ID	Site	Database(s)	EPA ID Number
39	**SP, SAC - SAND PILES** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **ENVIROSTOR** **HIST Cal-Sites**	**S100351371** **N/A**

RESPONSE:

Facility ID:	34320031
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-22 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5857369477911
Longitude:	-121.499380555556
Alias Name:	SOUTHERN PACIFIC TRANSPORTATION CO 34400004 SP, SAC - SAND PILES 34320031 100139
Alias Type:	Envirostor ID Number Project Code (Site Code) Envirostor ID Number Alternate Name Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1989-11-24 00:00:00
Confirmed:	30013
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34320031
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-22 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5857369477911
Longitude: -121.499380555556
Alias Name: SOUTHERN PACIFIC TRANSPORTATION CO
34400004
SP, SAC - SAND PILES
34320031
100139
Alias Type: Envirostor ID Number
Project Code (Site Code)
Envirostor ID Number
Alternate Name
Alternate Name
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1990-06-22 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Completed Document Type:	Remedial Action Completion Report
Completed Date:	1989-11-24 00:00:00
Confirmed:	30013
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

HISTORICAL CAL-SITES:

Facility ID:	34320031
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	06221990
Status:	CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name:	CERTIFIED
Lead Agency:	Not reported
Lead Agency:	N/A
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Unknown
SIC Code:	32
SIC Name:	MANU - STONE, CLAY & GLASS PRODUCTS
Access:	Not reported
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
Staff Member Responsible for Site:	SGOSS
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	Not reported
Region Water Control Board Name:	Not reported
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	09
State Senate District Code:	06

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SP, SAC. - PONDS & DITCH** **CA BOND EXP. PLAN** **S100833178**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Southern Pacific Transportation Company/Denver and Rio Grande Railroad
Project Revenue Source Addr:	Southern Pacific Building, 1 Market Plaza
Project Revenue Source City,St,Zip:	San Francisco/Denver, CA/CO 94105
Project Revenue Source Desc:	DHS has budgeted $50,000 for oversight activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	Industrial waste water disposal ponds and an industrial waste water conveyance ditch are the focal points of this site investigation. A RAP/RCRA closure is required.
Hazardous Waste Desc:	Sludge and soil samples analyzed contained high concentrations of copper, lead, zinc, 1,1,1-trichloroethane, trichloroethane, tetrachloroethene, naphthalene, and bis (2-ethylhexyl) phthalate. Ground water contaminants include chromium, methylene chloride, 1,1-dichloroethane (ethylene chloride), and trans-acetylene dichloride (trans-1,2-dichloroethane).
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds, insects, freshwater fish, nematodes, soil bacteria and grasses common to the Central Valley. The City of Sacramento has a domestic water intake from the Sacramento River located approximately one mile north of the site. Ground water is used by the State Printing Plant and Crystal Dairy for industrial purposes just north of the site. Wells serving Bannon Street residents have been tested for organics, metals and coliform organisms. Results showed all wells uncontaminated by organics and metals.
Site Activity Status:	Sludge from both the ponds and ditch was excavated and disposed of at a Class I landfill in 1984 and 1985 as IRMs. Three rounds of remedial investigation have been completed at the ponds and ditch, the most recent in May, 1987. Bench scale testing of soil solidification and soil washing is now underway. Until a final design is approved, the extraction well near the ponds and ditch has been turned off. A final feasibility study (FS) was received in October, 1988.

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39 **SP, SAC - SACRAMENTO STATION** **RESPONSE** **S101481755**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34400006
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified
Status Date:	1994-06-02 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5847502008032
Longitude:	-121.500730555556
Alias Name:	34400004
	CAD073772030
	P14013
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	SP, SAC - SACRAMENTO STATION
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	34400006
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

	laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1989-02-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10002, 10097, 10196, 30013
Potenital Description: * HALOGENATED ORGANIC COMPOUNDS
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * UNSPECIFIED OIL CONTAINING WASTE
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAILROAD RIGHT OF WAY

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400006
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Certified
Status Date: 1994-06-02 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5847502008032
Longitude: -121.500730555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
P14013	PCode
SACRAMENTO RAILYARD FACILITY	
SOUTHERN PACIFIC TRANSPORTATION CO	
SP, SAC - SACRAMENTO STATION	
SP-SAC - OVERALL SITE	
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	
100139	
34400006	
SP-SAC - LOCOMOTIVE WORKS	

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Deed Restriction / Land Use Covenant
Completed Date: 1994-05-19 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1994-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1989-02-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1988-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAILROAD RIGHT OF WAY

HISTORICAL CAL-SITES:

Facility ID:	34400006
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	06021994
Status:	CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Status Name: CERTIFIED
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UP, DOWNTOWN SAC - CENTRAL SHOPS** **CHMIRS** **S105954432**
401 I STREET **RESPONSE** **N/A**
SACRAMENTO, CA 95814 **DEED**
ENVIROSTOR
HIST Cal-Sites

CHMIRS:
OES Incident Number: 03-3608
OES notification: 7/18/200302:53:32 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	Union Pacific Railroad
Incident Date:	7/18/200312:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Train Derailment
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	1
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported
OES Incident Number:	05-3945
OES notification:	7/1/200505:52:41 PM
OES Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Amtrak
Incident Date:	7/1/200512:00:00 AM
Admin Agency:	Sacramento City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Diesel
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Gallons:	3
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported

AWP:

AWP Facility ID:	34400004
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	01011983
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	CV
RWQCB Associated With Site:	CENTRAL VALLEY
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	6
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400007
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
Current Status Date:	01011990
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400009
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400010
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400004
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	6
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Status:	Active
Status Date:	1983-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5874345180723
Longitude:	-121.500845
Alias Name:	CAD073772030
	34400010
	P11077
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400004
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - CENTRAL SHOP
Alias Type:	EPA Identification Number
	Envirostor ID Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC's request for an indoor air evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required.

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1980-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1984-03-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-05-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	2005-07-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2005-12-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2002-10-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-08-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-03-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,30433,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,3050,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400005
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004 CAD073772030 P14029 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400005 SP-SAC - LOCOMOTIVE WORKS SP-SAC - OVERALL SITE SP-SAC - PONDS AND DITCH UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - PONDS AND DITCH
Alias Type:	Envirostor ID Number EPA Identification Number PCode Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane
Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400007
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	50

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,3026-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene 30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

Facility ID:	34400009
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION COMPANY SP, SAC - CAR SHOP NINE 34400009 SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400010
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS SP-SAC OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - CENTRAL CORRIDOR
Alias Type:	EPA Identification Number Envirostor ID Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE
Status:	ACTIVE
Deed Date(s):	07/11/01

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 6
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400004
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Active
Status Date: 1983-01-01 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5874345180723
Longitude: -121.500845

Alias Name:	Alias Type:
CAD073772030	EPA Identification Number
34400010	Envirostor ID Number
P11077	PCode
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION CO	Alternate Name
34400004	Alternate Name
SP-SAC - LOCOMOTIVE WORKS	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
SP, SAC - CENTRAL SHOP	Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC's request for an indoor air

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required. This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type: Consent Order
Completed Date: 1988-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Discovery
Completed Date: 1980-01-07 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: CEQA - Responsible Agency Review
Completed Date: 2000-02-16 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 2003-02-21 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 1987-02-09 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 1984-03-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1995-05-12 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 2005-07-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Human Health Risk Assessment Report
Completed Date: 2005-12-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Investigation Report
Completed Date: 2002-10-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Implementation Workplan
Completed Date: 2003-02-01 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1995-08-08 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Workplan
Completed Date: 1995-04-27 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Removal Action Completion Report
Completed Date: 1993-03-08 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Participation Plan / Community Relations Plan

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000 ,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,304 3,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,30 50,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400005
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004
	CAD073772030
	P14029
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400005
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	SP-SAC - PONDS AND DITCH

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - PONDS AND DITCH

Alias Type: Envirostor ID Number
EPA Identification Number
PCode
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve

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UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
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Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	50
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400007
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304 1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,30 26-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
	30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400009
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION COMPANY
	SP, SAC - CAR SHOP NINE
	34400009
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Project Code (Site Code)
Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400010
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SP-SAC OVERALL SITE
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - CENTRAL CORRIDOR

Alias Type:	EPA Identification Number
	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400004
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01011983
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: CV
Region Water Control Board Name: CENTRAL VALLEY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400005
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01121996
Status: COM - CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED REMEDIATION CONTINUES
Status Name: CERTIFIED / OPERATION & MAINTENANCE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400007
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
State Senate District: 01011990
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400009
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400010
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SUSD** **Sacramento Co. CS** **S104795583**
425 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	R094
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	L
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000636
Case Type:	FAUX
Case Closed:	Y
Date Closed:	**Not reported**

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39 **UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **RESPONSE** **S107737490**
400 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

RESPONSE:

Facility ID:	70000034
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034 100139
Alias Type:	Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	70000034
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034
	100139
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1008984943** **N/A**

Manufactured Gas Plants:

A new area was added in 2003, entitled the Manufactured Gas Plant (MGP) Area, which was established after discovering remnants of an MGP on the western boundary of the northern shops area during soil remediation activities in the Northern Shops area.

39	**UP, DOWNROWN SAC-MANUFACTURED GAS PLAN** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1009508587** **N/A**

40	**DELTA KING** **1000 FRONT ST** **SACRAMENTO, CA 95814**	**Sacramento Co. ML**	**S105269360** **N/A**

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Disclaimer
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	50
Food Bill Code:	50
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

41	**FIRST UNION BANK C O JONES LANG LASALLE** **707 3RD ST** **W SACRAMENTO, CA 95605**	**RCRA-SQG** **FINDS** **HAZNET**	**1005441125** **CAR000115766**

Map ID	Site	Database(s)	EPA ID Number

FIRST UNION BANK C O JONES LANG LASALLE (Continued) **1005441125**

RCRAInfo:
Owner: F U N B C O JONES L LASALLE
(916) 344-9133
EPA ID: CAR000115766

Contact: LARRY COLBERT
(916) 374-9133

Classification: Small Quantity Generator
TSDF Activities: Not reported

Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Gepaid:	CAR000115766
Contact:	Larry Colbert
Telephone:	9163749133
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	707 3rd St
Mailing City,St,Zip:	W Sacramento, CA 95605
Gen County:	Yolo
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Disposal, Other
Tons:	0.22
Facility County:	Not reported

Gepaid:	CAR000115766
Contact:	Larry Colbert
Telephone:	9163749133
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	707 3rd St
Mailing City,St,Zip:	W Sacramento, CA 95605
Gen County:	Yolo
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Transfer Station
Tons:	0.02
Facility County:	Not reported

Map ID	Site	Database(s)	EPA ID Number

FIRST UNION BANK C O JONES LANG LASALLE (Continued) **1005441125**

Gepaid:	CAR000115766
Contact:	Larry Colbert
Telephone:	9163749133
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	707 3rd St
Mailing City,St,Zip:	W Sacramento, CA 95605
Gen County:	Yolo
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Treatment, Tank
Tons:	0.01
Facility County:	Not reported

---

41 **VACANT PROPERTY** **UST** **U004004440**
710-712 3RD ST **N/A**
WEST SACRAMENTO, CA 95691

UST:

Region:	Yolo
Facility ID:	FA0002470
Owner ID:	OW0002236
Owner Name:	KNIGHT MGMT & DEVELOPMENT CORP
Owner Address:	944 47TH ST
Owner City,St,Zip:	SACRAMENTO, CA 95819
Business Type:	01 - GAS STATION, 2 pur
Business ID:	01 - CORPORATION
Current Status:	Inactive
Program/Element:	2306 - UST PERMANENT CLOSURE PERMIT
Tank Number:	1
Tank Type:	motor vehicle
Tank Description:	DOUBLE WALLED
Tank Contents:	999
Tank Capacity:	1,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	002470

---

42 **THE EXPERIENCE MOTEL** **US BROWNFIELDS** **1009311571**
824 WEST CAPITOL AVENUE **N/A**
WEST SACRAMENTO, CA 95651

US BROWNFIELDS:

Recipient Name:	West Sacramento
Project Name:	West Sacramento, CA (A03)
Name:	The Experience Motel
Parcel #:	Not reported
Parcel size:	0.00
Latitude:	38.58261
Longitude:	-121.51867
Region:	9
HCM:	Address Matching-House Number
Map scale:	1:24,000

Map ID	Site	Database(s)	EPA ID Number

THE EXPERIENCE MOTEL (Continued) **1009311571**

Point of reference:	Entrance Point of a Facility or Station
Horiz. collect. method:	Not reported
ACRES property ID:	18984
Start date:	/ /
Complete date:	9/30/2004
Accomplishment:	Phase I Environmental Assessment
Ownership entity:	Not reported

---

42 **820 WEST CAPITOL AVENUE** **US BROWNFIELDS** **1009311443**
820 WEST CAPITOL AVENUE **N/A**
WEST SACRAMENTO, CA 95691

US BROWNFIELDS:

Recipient Name:	West Sacramento
Project Name:	West Sacramento, CA (A03)
Name:	820 West Capitol Avenue
Parcel #:	Not reported
Parcel size:	0.00
Latitude:	38.5826
Longitude:	-121.5181
Region:	9
HCM:	Address Matching-House Number
Map scale:	1:24,000
Point of reference:	Entrance Point of a Facility or Station
Horiz. collect. method:	Not reported
ACRES property ID:	18983
Start date:	/ /
Complete date:	9/30/2004
Accomplishment:	Phase I Environmental Assessment
Ownership entity:	Not reported

---

43 **RALEY'S LANDING/PARRISH ARCO** **LUST** **S104403933**
490 WEST CAPITOL AVE **N/A**
WEST SACRAMENTO, CA 95691

LUST:

Region:	STATE
Case Type:	Drinking Water Aquifer affected
Cross Street:	FIFTH STREET
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Tank Closure
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Tank
Global Id:	T0611300078
Stop Date:	1989-01-16 00:00:00
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	1990-05-04 00:00:00
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	Not reported
Monitoring:	Not reported
Close Date:	1991-07-02 00:00:00
Discover Date:	1989-10-16 00:00:00

Map ID	Site	Database(s)	EPA ID Number

RALEY'S LANDING/PARRISH ARCO (Continued) **S104403933**

Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1990-03-22 00:00:00
Review Date: 2000-05-17 00:00:00
Enter Date: 1990-03-27 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 57
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Unleaded Gasoline
Contact Person: Not reported
Responsible Party: RALEY'S
RP Address: 500 WEST CAPITAL AVE., WEST SACRAMENTO, CA 95606
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: DFS
Staff Initials: BRU
Lead Agency: Local Agency
Local Agency: 57000
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 570108
Qty Leaked: Not reported
Abate Method: Not reported
Operator: NONE
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: SOIL CONTAM. WORKPLAN SUBMITTED MARCH 11, 90. PROPOSES FOUR SOIL BORINGS, AND ONE COMPLETED AS A MONITORING WELL.

LUST:
Region: 5
Case Number: 570108
Staff Initials: DFS
Substance: UNLEAD GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Map ID	Site	Database(s)	EPA ID Number
43	**RALEY'S LANDING/PARRISH A** **490 CAPITOL** **WEST SACRAMENTO, CA 95606**	**Cortese**	**S105027361** **N/A**

Cortese:
Region: CORTESE
Facility Addr2: Not reported

Map ID	Site	Database(s)	EPA ID Number
44	**MCGEE'S OLD TIME PHOTOS** **1107 FRONT ST** **SACRAMENTO, CA 95814**	**HAZNET** **Sacramento Co. ML**	**S102315197** **N/A**

HAZNET:
Gepaid: CAL000129087
Contact: ALISON TAYLOR
Telephone: 9164427234
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1107 FRONT ST
Mailing City,St,Zip: SACRAMENTO, CA 958143209
Gen County: Sacramento
TSD EPA ID: NVD981639826
TSD County: 99
Waste Category: Not reported
Disposal Method: ***
Tons: .0000
Facility County: Sacramento

Gepaid: CAL000129087
Contact: ALISON TAYLOR
Telephone: 9164427234
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1107 FRONT ST
Mailing City,St,Zip: SACRAMENTO, CA 958143209
Gen County: Sacramento
TSD EPA ID: NVD981639826
TSD County: 99
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .1167
Facility County: Sacramento

Gepaid: CAL000222354
Contact: SHARI COOMES-OWNER
Telephone: 9164427234
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: 1107 FRONT ST
Mailing City,St,Zip: SACRAMENTO, CA 958140000
Gen County: Sacramento
TSD EPA ID: NVR000043927
TSD County: Sacramento
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Not reported
Tons: 0.19
Facility County: Sacramento

Map ID	Site	Database(s)	EPA ID Number

MCGEE'S OLD TIME PHOTOS (Continued) **S102315197**

Gepaid:	CAL000222354
Contact:	SHARI COOMES-OWNER
Telephone:	9164427234
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1107 FRONT ST
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Sacramento
TSD EPA ID:	NVR000043927
TSD County:	Sacramento
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	Not reported
Facility County:	Sacramento

Gepaid:	CAL000129087
Contact:	ALISON TAYLOR
Telephone:	9164427234
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	1107 FRONT ST
Mailing City,St,Zip:	SACRAMENTO, CA 958143209
Gen County:	Sacramento
TSD EPA ID:	NVR000043927
TSD County:	99
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.3125
Facility County:	Sacramento

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

Sacramento Co. ML:

FD:	Not reported
Billing Codes BP:	I
Billing Codes UST:	Not reported
WG Bill Code:	I
Target Property Bill Cod:	Not reported
Food Bill Code:	Not reported
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	Not reported
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	Not reported

Map ID	Site	Database(s)	EPA ID Number
44	**GOLDEN DRAGON RESTAURANT** **1115 FRONT ST** **SACRAMENTO, CA 95814**	**Sacramento Co. ML**	**S105269361** **N/A**

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Disclaimer
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	50
Food Bill Code:	50
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

Map ID	Site	Database(s)	EPA ID Number
44	**DAY'S OF 49** **1115 FRONT ST #11** **SACRAMENTO, CA 95814**	**Sacramento Co. ML**	**S105269362** **N/A**

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Out of Business
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	51
Food Bill Code:	51
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

Map ID	Site	Database(s)	EPA ID Number
45	**PDC PROPERTIES** **428 J ST** **SACRAMENTO, CA 95814**	**HAZNET** **LUST**	**S103981309** **N/A**

HAZNET:

Gepaid:	CAC001316368
Contact:	PDC PROPERTIES
Telephone:	9163815195
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	8395 JACKSON RD STE F
Mailing City,St,Zip:	SACRAMENTO, CA 958260000
Gen County:	Sacramento
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Disposal, Land Fill
Tons:	.1000
Facility County:	Sacramento

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	4TH ST
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global Id:	T0606700528
Stop Date:	Not reported
Confirm Leak:	1992-05-22 00:00:00
Workplan:	1992-05-22 00:00:00
Prelim Assess:	1992-05-22 00:00:00
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	1992-05-22 00:00:00
Monitoring:	Not reported
Close Date:	1993-02-24 00:00:00
Discover Date:	1992-05-22 00:00:00
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1992-06-02 00:00:00
Review Date:	1993-03-18 00:00:00
Enter Date:	1992-06-10 00:00:00
MTBE Date:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Max MTBE GW ppb:	Not reported
Max MTBE Soil ppb:	Not reported
County:	34
Org Name:	Not reported
Reg Board:	5S
Status:	Case Closed
Chemical:	Diesel
Contact Person:	Not reported
Responsible Party:	SHRA
RP Address:	1017 7TH ST # 200,SACRAMENTO,CA 95814
Interim:	Yes

Map ID	Site	Database(s)	EPA ID Number

PDC PROPERTIES (Continued) **S103981309**

Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: VJF
Staff Initials: DWB
Lead Agency: Local Agency
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 340623
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Operator: UNKNOWN
Water System Name: TWO RIVERS RV PARK
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: W0603900814
Waste Disch Assigned Name: 2000814-001GEN
Summary: Not reported

LUST:
Region: 5
Case Number: 340623
Staff Initials: VJF
Substance: DIESEL
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

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46 **FORMER TOWER COURT PROPERTIES** **US BROWNFIELDS** **1009311498**
706 TOWER COURT **N/A**
WEST SACRAMENTO, CA 95691

US BROWNFIELDS:
Recipient Name: West Sacramento
Project Name: West Sacramento, CA (A03)
Name: Former Tower Court Properties
Parcel #: Not reported
Parcel size: 0.00
Latitude: 38.58214
Longitude: -121.51695
Region: 9
HCM: Address Matching-House Number
Map scale: 1:24,000
Point of reference: Entrance Point of a Facility or Station
Horiz. collect. method: Not reported
ACRES property ID: 18981
Start date: / /

Map ID	Site	Database(s)	EPA ID Number

FORMER TOWER COURT PROPERTIES (Continued) **1009311498**

Complete date: 9/30/2004
Accomplishment: Phase I Environmental Assessment
Ownership entity: Not reported

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47 **RALEY'S FUEL STATION** **UST** **U004003906**
300 W CAPITOL AVE **N/A**
BRODERICK, CA 95605

UST:
Region: Yolo
Facility ID: FA0000306
Owner ID: OW0000240
Owner Name: RALEY'S CORPORATION
Owner Address: P O BOX 15618
Owner City,St,Zip: SACRAMENTO, CA 95852
Business Type: 99 - OTHER
Business ID: 09 - UNKNOWN
Current Status: Inactive
Program/Element: 2306 - UST PERMANENT CLOSURE PERMIT
Tank Number: 1
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 4,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000306
Tank Number: 2
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 4,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000306
Tank Number: 3
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 4,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000306
Tank Number: 4
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 4,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported

Map ID	Site	Database(s)	EPA ID Number

RALEY'S FUEL STATION (Continued) **U004003906**

Inv Gen:	000306
Tank Number:	5
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	001
Tank Capacity:	4,000
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000306
Tank Number:	6
Tank Type:	petroleum
Tank Description:	SINGLE WALLED
Tank Contents:	008
Tank Capacity:	550
Leak Detection #:	Not reported
Tank Status:	inactive
LEA ID:	Not reported
Surcharge Year:	Not reported
Inv Gen:	000306

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48 **MAXINE'S** **Sacramento Co. ML** **S105269363**
1201 FRONT ST **N/A**
SACRAMENTO, CA 95814

Sacramento Co. ML:

FD:	U
Billing Codes BP:	Out of Business
Billing Codes UST:	No Tanks
WG Bill Code:	Oil Changed by Outside Company-No Fee
Target Property Bill Cod:	51
Food Bill Code:	51
CUPA Permit Date:	Not reported
HAZMAT Permit Date:	Not reported
HAZMAT Inspection Date:	Not reported
Hazmat Date BP Received:	Not reported
UST Permit Dt:	Not reported
UST Inspection Date:	Not reported
UST Tank Test Date:	Not reported
Number of Tanks:	0
Facility Id:	Not reported
UST Tank Test Date:	Not reported
SIC Code:	Not reported
Tier Permitting:	Not reported
AST Bill Code:	Not reported
CALARP Bill Code:	Not reported
Status Type:	INACTIVE. INCLUDED ON A LISTING NO LONGER UPDATED.

Map ID	Site	Database(s)	EPA ID Number
49	**SUNSHINE LAUNDRY AND CLEANERS** **820 MERKLEY AVENUE** **WEST SACRAMENTO, CA 95691**	**ENVIROSTOR**	**S100190978** **N/A**

ENVIROSTOR:

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Steven Becker
Division Branch:	Central California
Facility ID:	57720003
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5808333333333
Longitude:	-121.521944444444
Alias Name:	57720003
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	2000-07-26 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number
50	**FREDERICKSEN TANK LINES** **850 DELTA LN** **WEST SACRAMENTO, CA 95691**	**HAZNET** **LUST** **Cortese** **CA WDS**	**S105032981** **N/A**

HAZNET:

Gepaid:	CAD006914709
Contact:	LEONARD D ROBINSON
Telephone:	9163714960
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 717
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910717
Gen County:	Sacramento
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Disposal, Other
Tons:	4.1283
Facility County:	Sacramento

Gepaid:	CAD006914709
Contact:	LEONARD D ROBINSON
Telephone:	9163714960
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 717
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910717
Gen County:	Sacramento
TSD EPA ID:	CAD980887418
TSD County:	1
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	3.6696
Facility County:	Sacramento

Gepaid:	CAD006914709
Contact:	LEONARD D ROBINSON
Telephone:	9163714960
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 717
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910717
Gen County:	Sacramento
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Off-specification, aged, or surplus organics
Disposal Method:	Recycler
Tons:	2.0850
Facility County:	Sacramento

Gepaid:	CAD006914709
Contact:	LARRY PAINTER
Telephone:	9163714655
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 717
Mailing City,St,Zip:	WEST SACRAMENTO, CA 956910717
Gen County:	Yolo

Map ID	Site	Database(s)	EPA ID Number

FREDERICKSEN TANK LINES (Continued) **S105032981**

TSD EPA ID: CAD044003556
TSD County: Yolo
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: 1.92
Facility County: Not reported

Gepaid: CAD006914709
Contact: LEONARD D ROBINSON
Telephone: 9163714960
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: PO BOX 717
Mailing City,St,Zip: WEST SACRAMENTO, CA 956910717
Gen County: Sacramento
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: Recycler
Tons: 3.6487
Facility County: Sacramento

Click this hyperlink while viewing on your computer to access
17 additional CA_HAZNET: record(s) in the EDR Site Report.

LUST:
Region: STATE
Case Type: Drinking Water Aquifer affected
Cross Street: Not reported
Enf Type: None Taken
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global Id: T0611300031
Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 1988-08-17 00:00:00
Pollution Char: 2004-04-07 00:00:00
Remed Plan: 1997-11-06 00:00:00
Remed Action: 1998-08-04 00:00:00
Monitoring: Not reported
Close Date: Not reported
Discover Date: Not reported
Enforcement Dt: 2001-05-03 00:00:00
Release Date: 1988-08-17 00:00:00
Review Date: 2001-09-21 00:00:00
Enter Date: 1990-01-12 00:00:00
MTBE Date: 2000-09-27 00:00:00
GW Qualifier: =
Soil Qualifier: Not reported
Max MTBE GW ppb: 5.20
Max MTBE Soil ppb: Not reported
County: 57
Org Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

FREDERICKSEN TANK LINES (Continued) **S105032981**

Reg Board: 5S
Status: Pollution Characterization
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: RIVER CITY PETROLEUM
RP Address: 850 DELTA LANE WEST SACRAMENTO, CA 95691
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: C
MTBE Conc: 2
MTBE Fuel: 1
MTBE Tested: MTBE Detected. Site tested for MTBE and MTBE detected
Staff: DFS
Staff Initials: BRU
Lead Agency: Regional Board
Local Agency: 57000
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 570046
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: 09/07/95 WASTE OIL TANK PULLED

LUST:
Region: 5
Case Number: 570046
Staff Initials: DFS
Substance: GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Pollution Characterization
Lead Agency: Regional
Program: LUST
MTBE Code: 1

Cortese:
Region: CORTESE
Facility Addr2: 850 DELTA LN

CA WDS:
Facility ID: 5S 57I001755
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.

Map ID	Site	Database(s)	EPA ID Number

FREDERICKSEN TANK LINES (Continued) **S105032981**

Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	0
Facility Telephone:	9163714655
Facility Contact:	RICHARD FREITAS
Agency Name:	FREDERICKSEN TANK LINES INC
Agency Address:	850 DELTA LANE
Agency City,St,Zip:	West Sacramento 956910717
Agency Contact:	RICHARD FREITAS
Agency Telephone:	9163714655
Agency Type:	Private
SIC Code:	4213
SIC Code 2:	Not reported
Primary Waste:	Stormwater Runoff
Primary Waste Type:	Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

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51 **COAST OIL COMPANY** UP TO 1997 ARCHIVED** **SLIC** **S106230593**
801 RIVER RD S **N/A**
WEST SACRAMENTO, CA

SLIC:

Region:	5
Facility Status:	Closed by County
Unit:	Facility is a Spill or site
Pollutant:	TPH, benzene
Lead Agency:	Not reported
Date Filed:	02/25/97
Report Date:	02/07/97
Date Added:	Not reported
Date Closed:	Not reported

Map ID	Site	Database(s)	EPA ID Number
52	**ROADWAY EXPRESS INC** **800 DELTA LN** **WEST SACRAMENTO, CA 95691**	**LUST** **CHMIRS** **Cortese**	**S100217150** **N/A**

LUST:

Region:	STATE
Case Type:	Drinking Water Aquifer affected
Cross Street:	RISKE LN
Enf Type:	CLOS
Funding:	Not reported
How Discovered:	OM
How Stopped:	Not reported
Leak Cause:	Structure Failure
Leak Source:	Tank
Global Id:	T0611300127
Stop Date:	1986-04-04 00:00:00
Confirm Leak:	Not reported
Workplan:	Not reported
Prelim Assess:	1991-08-05 00:00:00
Pollution Char:	2003-11-06 00:00:00
Remed Plan:	Not reported
Remed Action:	1996-04-09 00:00:00
Monitoring:	Not reported
Close Date:	2006-07-18 00:00:00
Discover Date:	1991-07-31 00:00:00
Enforcement Dt:	1965-01-01 00:00:00
Release Date:	1991-08-05 00:00:00
Review Date:	2001-11-01 00:00:00
Enter Date:	1991-08-14 00:00:00
MTBE Date:	2000-08-17 00:00:00
GW Qualifier:	=
Soil Qualifier:	Not reported
Max MTBE GW ppb:	5.00
Max MTBE Soil ppb:	Not reported
County:	57
Org Name:	Not reported
Reg Board:	5S
Status:	Case Closed
Chemical:	Diesel
Contact Person:	Not reported
Responsible Party:	ROADWAY SERVICE INC
RP Address:	1077 GORGE BLVD,AKRON, OH 44310
Interim:	Not reported
Oversight Prgm:	LUST
MTBE Class:	Not reported
MTBE Conc:	8
MTBE Fuel:	0
MTBE Tested:	MTBE Detected. Site tested for MTBE and MTBE detected
Staff:	DFS
Staff Initials:	BRU
Lead Agency:	Regional Board
Local Agency:	57000
Hydr Basin #:	SACRAMENTO VALLEY (5
Beneficial:	Not reported
Priority:	3
Cleanup Fund Id:	Not reported
Work Suspended:	No
Local Case #:	Not reported
Case Number:	570167

Map ID	Site	Database(s)	EPA ID Number

ROADWAY EXPRESS INC (Continued) **S100217150**

Qty Leaked: Not reported
Abate Method: Excavate and Treat - remove contaminated soil and treat (includes spreading or land farming)
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: THIS SITE HAS TWO SEPERATE PLUMES,WHICH MAY BE OVERLAPP-ING,BOTH ORIGINATED FROM UST'S

LUST:
Region: 5
Case Number: 570167
Staff Initials: DFS
Substance: DIESEL
Case Type: Drinking Water Aquifer affected
Status: Case Closed
Lead Agency: Regional
Program: LUST
MTBE Code: 1

CHMIRS:
OES Incident Number: 8905849
OES notification: Not reported
OES Date: Not reported
OES Time: Not reported
Incident Date: 18-APR-89
Date Completed: 19-APR-89
Property Use: 600
Agency Id Number: 57714
Agency Incident Number: 8943
Time Notified: 2330
Time Completed: 215
Surrounding Area: 600
Estimated Temperature: 50
Property Management: P
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: N
Resp Agncy Personel # Of Decontaminated: 0
Responding Agency Personel # Of Injuries: 0
Responding Agency Personel # Of Fatalities: 0
Others Number Of Decontaminated: 0
Others Number Of Injuries: 0
Others Number Of Fatalities: 0
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported

Map ID	Site	Database(s)	EPA ID Number

ROADWAY EXPRESS INC (Continued) **S100217150**

Company Name:	Not reported
Reporting Officer Name/ID:	J BRUCE SARAZIN
Report Date:	22-APR-89
Comments:	Not reported
Facility Telephone:	916 666-8646
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	09-MAY-90
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Description:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

Cortese:

Region:	CORTESE
Facility Addr2:	800 DELTA LN

Map ID	Site	Database(s)	EPA ID Number
53	**H AND H CLEANERS** **1231 MERKLEY AVENUE** **WEST SACRAMENTO, CA 95691**	**ENVIROSTOR**	**S100190982** **N/A**

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57720007
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5802777777778
Longitude:	-121.522777777778
Alias Name:	57720007
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number
54	**WESTCO TECHNOLOGIES** **801 SOUTH RIVER RD.** **WEST SACRAMENTO, CA 95691**	**ENVIROSTOR**	**S101482934** **N/A**

ENVIROSTOR:

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Steven Becker
Division Branch:	Central California
Facility ID:	57290002
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: RWQCB
Status Date:	1987-01-29 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5808333333333
Longitude:	-121.510277777778
Alias Name:	57290002
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	NO DEPARTMENT OF HEALTH SERVICES FILE FOUND.ACTIVE SITE SPILLED PETROLEUM ON GROUND. SITE REFERRED TO COUNTY HEALTH AND REGIONAL WATER QUALITY CONTROL BOARD.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1982-03-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	2000-11-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-01-28 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10196
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported

Map ID	Site	Database(s)	EPA ID Number

WESTCO TECHNOLOGIES (Continued) **S101482934**

Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: NONE SPECIFIED

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54 **RELLES OIL** **LUST** **S105791099**
801 SOUTH RIVER ROAD **N/A**
WEST SACRAMENTO, CA 95691

LUST:
Region: STATE
Case Type: Other ground water affected
Cross Street: 3RD STREET
Enf Type: TC
Funding: Not reported
How Discovered: OM
How Stopped: Other Means
Leak Cause: UNK
Leak Source: UNK
Global Id: T0611355558
Stop Date: 2001-03-30 00:00:00
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: 2004-04-27 00:00:00
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: Not reported
Discover Date: 2001-03-30 00:00:00
Enforcement Dt: 2001-03-30 00:00:00
Release Date: 2002-10-09 00:00:00
Review Date: Not reported
Enter Date: Not reported
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 57
Org Name: Not reported
Reg Board: 5S
Status: Preliminary site assessment underway
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: RELLES INSURANCE SERVICES
RP Address: 2322 J ST, SACRAMENTO, CA 95816
Interim: Not reported
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: DFS
Staff Initials: JW
Lead Agency: Regional Board
Local Agency: 57000
Hydr Basin #: Not reported
Beneficial: Not reported

Map ID	Site	Database(s)	EPA ID Number

RELLES OIL (Continued) **S105791099**

Priority: Not reported
Cleanup Fund Id: Not reported
Work Suspended: Not reported
Local Case #: Not reported
Case Number: 570319
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: Not reported
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: Not reported
Waste Disch Assigned Name: Not reported
Summary: Not reported

LUST:
Region: 5
Case Number: 570319
Staff Initials: DFS
Substance: GASOLINE
Case Type: Other ground water affected
Status: Preliminary site assessment underway
Lead Agency: Regional
Program: LUST
MTBE Code: N/A

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55 **FABRICARE ONE HOUR MARTINIZING #2** **ENVIROSTOR** **S107736310**
827 JEFFERSON BOULEVARD **N/A**
WEST SACRAMENTO, CA 95691

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Central California
Facility ID: 57720005
Site Code: Not reported
Assembly: 08
Senate: 05
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 1994-11-16 00:00:00
Restricted Use: NO
Funding: Not reported
Latitude: 38.4780555555556
Longitude: -121.580833333333
Alias Name: 57720005
Alias Type: Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Not reported
Completed Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

FABRICARE ONE HOUR MARTINIZING #2 (Continued) **S107736310**

Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

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57 **CAPITOL GATEWAY** **SLIC** **S105892106**
301 CAPITOL MALL **N/A**
SACRAMENTO, CA

SLIC:

Region:	STATE
Global Id:	SL0606737129
Assigned Name:	SLICSITE
Lead Agency Contact:	CORI CONDON
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	Not reported
Responsible Party:	Not reported
Recent Dtw:	Not reported
Substance Released:	12034, 8
Facility Status:	**Not reported**

SLIC:

Region:	5
Facility Status:	Preliminary Assessment
Unit:	Facility is a Spill or site
Pollutant:	TPHmo, TPGd Ethanol
Lead Agency:	Not reported
Date Filed:	/ /
Report Date:	10/19/04
Date Added:	Not reported
Date Closed:	Not reported

Map ID	Site	Database(s)	EPA ID Number
58	**PAYLESS CLEANERS (2)** **1351 MERKLEY AVENUE** **WEST SACRAMENTO, CA 95691**	**ENVIROSTOR**	**S101482950** **N/A**

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	57720002
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5797222222222
Longitude:	-121.524444444444
Alias Name:	57720002
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number
59	**C&S BATTERY & LEAD CO** **860 RISKE LN** **W SACRAMENTO, CA 95691**	**CERC-NFRAP**	**1003878420** **CAD980496897**

CERC-NFRAP:
- Site ID: 0901739
- Federal Facility: Not a Federal Facility
- NPL Status: Not on the NPL
- Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
- Contact Name: Matt Mitguard
- Contact Tel: (415) 972-3096
- Contact Title: Site Assessment Manager (SAM)

- Contact Name: Jere Johnson
- Contact Tel: (415) 972-3094
- Contact Title: Site Assessment Manager (SAM)

Site Description: Not reported

CERCLIS-NFRAP Assessment History:
- Action: DISCOVERY
- Date Started: Not reported
- Date Completed: 09/01/1979
- Priority Level: Not reported

- Action: ARCHIVE SITE
- Date Started: Not reported
- Date Completed: 09/01/1982
- Priority Level: Not reported

- Action: PRELIMINARY ASSESSMENT
- Date Started: Not reported
- Date Completed: 09/01/1982
- Priority Level: NFRAP (No Futher Remedial Action Planned

Map ID	Site	Database(s)	EPA ID Number
59	**SACRAMENTO STUCCO CO.** **860 RISKE LANE** **WEST SACRAMENTO, CA 95691**	**VCP** **ENVIROSTOR**	**S107737188** **N/A**

VCP:
- Facility ID: 60000284
- Site Type: Voluntary Cleanup
- Site Type Detail: Voluntary Cleanup
- Acres: 2.86
- National Priorities List: NO
- Cleanup Oversight Agencies: SMBRP
- Lead Agency: SMBRP
- Lead Agency Description: Not reported
- Project Manager: LEONA WINNER
- Supervisor: Steven Becker
- Division Branch: Brownfields Revitalization Unit
- Site Code: 101782
- Assembly: 08
- Senate: 05
- Special Programs Code: Voluntary Cleanup Program
- Status: Active
- Status Date: 2006-04-15 00:00:00
- Restricted Use: NO

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO STUCCO CO. (Continued) **S107737188**

Funding:	Responsible Party
Lat/Long:	38.5796 / -121.5159
Alias Name:	60000284 101782
Alias Type:	Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	A Voluntary Cleanup Agreement was executed. The agreement calls for the completion of a Preliminary Endangerment Assessment. Acopy was transmitted to the Proponent on 4/28/2006.Workplan for additional soil investigation was approved. Final letted was uploaded under Preliminary Endangerment Assessment (PEA). We approved the PEA and workplan in the same letter.PEA equivalent documentation was reviewed and further investigation is necessary.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	2006-04-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	2006-08-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Investigation/Characterization Report
Completed Date:	2007-03-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Investigation/Characterization Workplan
Completed Date:	2006-08-07 00:00:00
Confirmed:	30343
Confirmed Description:	Lead, Organic (tetraethyl lead)
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Removal Action Workplan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Removal Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Public Notice
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Fact Sheets
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	CEQA - Initial Study/ Neg. Declaration
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO STUCCO CO. (Continued) **S107737188**

Media Affected: SOIL
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30343
Potenital Description: Lead, Organic (tetraethyl lead)
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: BATTERY RECLAMATION, BATTERY STORAGE

ENVIROSTOR:
Site Type: Voluntary Cleanup
Site Type Detailed: Voluntary Cleanup
Acres: 2.86
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: LEONA WINNER
Supervisor: Steven Becker
Division Branch: Brownfields Revitalization Unit
Facility ID: 60000284
Site Code: 101782
Assembly: 08
Senate: 05
Special Program: Voluntary Cleanup Program
Status: Active
Status Date: 2006-04-15 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5796
Longitude: -121.5159
Alias Name: 60000284
101782
Alias Type: Project Code (Site Code)
Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: A Voluntary Cleanup Agreement was executed. The agreement calls for the completion of a Preliminary Endangerment Assessment. Acopy was transmitted to the Proponent on 4/28/2006.Workplan for additional soil investigation was approved. Final letted was uploaded under Preliminary Endangerment Assessment (PEA). We approved the PEA and workplan in the same letter.PEA equivalent documentation was reviewed and further investigation is necessary.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Clean-up Agreement
Completed Date: 2006-04-25 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 2006-08-07 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO STUCCO CO. (Continued) **S107737188**

Completed Document Type:	Site Investigation/Characterization Report
Completed Date:	2007-03-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Investigation/Characterization Workplan
Completed Date:	2006-08-07 00:00:00
Confirmed:	30343
Confirmed Description:	Lead, Organic (tetraethyl lead)
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Removal Action Workplan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Removal Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Public Notice
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Fact Sheets
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	CEQA - Initial Study/ Neg. Declaration
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30343
Potenital Description:	Lead, Organic (tetraethyl lead)
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	BATTERY RECLAMATION, BATTERY STORAGE

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60 **UNIVAR USA, INC** **EMI** **S101482948**
850 SOUTH RIVER ROAD **ENVIROSTOR** **N/A**
WEST SACRAMENTO, CA 95691

EMI:

Year:	1998
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4225
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UNIVAR USA, INC (Continued) **S101482948**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

UNIVAR USA, INC (Continued) **S101482948**

Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2002
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	133
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2003
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	133
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2004
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	259.0909091
Reactive Organic Gases Tons/Yr:	1.71
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2005
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV

Map ID	Site	Database(s)	EPA ID Number

UNIVAR USA, INC (Continued) **S101482948**

Facility ID:	864
Air District Name:	YS
SIC Code:	4959
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	16.66666666666666666
Reactive Organic Gases Tons/Yr:	.11
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

ENVIROSTOR:

Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	2.5
NPL:	NO
Regulatory Agencies:	RWQCB 5S - Central Valley
Lead Agency:	RWQCB 5S - Central Valley
Program Manager:	Not reported
Supervisor:	Steven Becker
Division Branch:	Central California
Facility ID:	57510003
Site Code:	Not reported
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	Refer: RWQCB
Status Date:	1989-11-17 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5808333333333
Longitude:	-121.511111111111
Alias Name:	57510003
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) SITE. RWQCB HAS RECEIVED PHASE II SITE INVESTI GATION REPORT FOR REVIEW. SITE SCREENING DONE. RWQCB ACTIVE IN INVESTIGATION OF GROUND- WATER CONTAMINATION. WASTE FOUND IN GROUNDWATER KNOWN TO HAVE BEEN HANDLED AT SITE.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1988-03-14 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	2000-07-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1989-11-17 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UNIVAR USA, INC (Continued) **S101482948**

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: NONE SPECIFIED
Media Affected Desc: Not reported
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10003
Potenital Description: * HALOGENATED SOLVENTS
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: NONE SPECIFIED

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60 **VAN WATERS & ROGERS** **Cortese** **S105027374**
850 SOUTH RIVER RD **SLIC** **N/A**
WEST SACRAMENTO, CA

Cortese:
Region: CORTESE
Facility Addr2: 850 SOUTH RIVER RD

SLIC:
Region: STATE
Global Id: SL205423013
Assigned Name: SLICSITE
Lead Agency Contact: KAREN A. BESSETTE
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SL205423013
Responsible Party: MIKE GAUDETTE
Recent Dtw: Not reported
Substance Released: VOC
Facility Status: **Verification Monitoring Underway**

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60 **VAN WATERS & ROGERS, INC** **CERCLIS** **1003109060**
850 SOUTH RIVER ROAD **CAN000905702**
WEST SACRAMENTO, CA 95691

CERCLIS:
Site ID: 0905702
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: PA Start Needed

CERCLIS Site Contact Name(s):
Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

Site Description: RWQCB Central Valley lead according to Envirostor

CERCLIS Assessment History:
Action: PRE-CERCLIS SCREENING

Map ID	Site	Database(s)	EPA ID Number
	VAN WATERS & ROGERS, INC (Continued)		**1003109060**
	Date Started: Not reported Date Completed: 07/26/2000 Priority Level: Not reported		
61	**SACRAMENTO ENGINEERING DEPOT** **WEST SACRAMENTO, CA**	**FUDS**	**1007211833** **N/A**

FUDS:

Federal Facility ID:	CA9799F5842
FUDS #:	J09CA0922
Facility Name:	Sacramento Engineering Depot
City:	West Sacramento
State:	CA
EPA Region:	9
County:	YOLO
Congressional District:	01
US Army District:	Sacramento District (SPK)
Fiscal Year:	2006
Telephone:	916-557-7461
NPL Status:	Not Listed
RAB:	Not reported
CTC:	243.73
Current Owner:	PRIVATE
Current Prog:	Not reported
Future Prog:	Not reported

FUDS Description Details:

The site is located in West Sacramento, California, in Yolo County. It occupies 27.8 acres in Township 9 North, Range 4 East, M.D.B. & M. It is bounded on the west by Riske Lane and on the northwest by Ball Park Drive. South River Road forms the e
east and south boundaries of the site. During the site visits in 1989 and 2003, the Sacramento Engineering Depot site was occupied by numerous commercial and industrial facilities. No structures were identified to be of the definite DOD origin.

FUDS History Details:

In the 1942 the Army leased 27.8 acres from the Sacramento Northern Railway. The are was used by the Corps of Engineers, the former Pacific Division, as a closed storage area for the military supplies. The government constructed 18,051 square feet
of shop space. Ten acres of gravel paving was added to the property. A directive dated 20 February 1945 authorized the acquisition of the property in a fee interest, in lieu of leasehold interest. At the end of the war, a military necessity was no
o longer required; thus the property was surplused 31 July 1947 and the lease cancelled defective 31 October 1947. Copies of the lease, a yard plans for the building and lease cancellation could not be found.

Map ID	Site	Database(s)	EPA ID Number
62	**RICE GROWERS ASSOCIATION OF CAL** **901 S RIVER RD** **WEST SACRAMENTO, CA 95691**	**RCRA-SQG** **FINDS** **HAZNET** **UST** **EMI** **ENVIROSTOR**	**1000196926** **CAD981390123**

RCRAInfo:
Owner: NOT REQUIRED
(415) 555-1212
EPA ID: CAD981390123
Contact: Not reported
Classification: Small Quantity Generator
TSDF Activities: Not reported
Violation Status: No violations found

FINDS:
Other Pertinent Environmental Activity Identified at Site

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Gepaid: CAD981390123
Contact: Not reported
Telephone: 0000000000
Facility Addr2: Not reported
Mailing Name: Not reported
Mailing Address: P O BOX 958
Mailing City,St,Zip: SACRAMENTO, CA 958040000
Gen County: Sacramento
TSD EPA ID: CAD044003556
TSD County: Yolo
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: 1.5429
Facility County: Sacramento

UST:
Region: Yolo
Facility ID: FA0000318
Owner ID: OW0000250
Owner Name: GOLD RIVER MILLS
Owner Address: 1620 E KENTUCKY AVE
Owner City,St,Zip: WOODLAND, CA 95776
Business Type: 99 - OTHER
Business ID: 09 - UNKNOWN
Current Status: Inactive
Program/Element: 2306 - UST PERMANENT CLOSURE PERMIT
Tank Number: 1
Tank Type: petroleum

Map ID	Site	Database(s)	EPA ID Number

RICE GROWERS ASSOCIATION OF CAL (Continued) **1000196926**

Tank Description: SINGLE WALLED
Tank Contents: 001
Tank Capacity: 550
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000318
Tank Number: 2
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 002
Tank Capacity: 1,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000318
Tank Number: 3
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 002
Tank Capacity: 5,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000318
Tank Number: 4
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 003
Tank Capacity: 6,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000318
Tank Number: 5
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 003
Tank Capacity: 8,000
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported
Inv Gen: 000318
Tank Number: 6
Tank Type: petroleum
Tank Description: SINGLE WALLED
Tank Contents: 999
Tank Capacity: 500
Leak Detection #: Not reported
Tank Status: inactive
LEA ID: Not reported
Surcharge Year: Not reported

Map ID	Site	Database(s)	EPA ID Number

RICE GROWERS ASSOCIATION OF CAL (Continued) **1000196926**

Inv Gen: 000318

EMI:

Year:	2000
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	1101
Air District Name:	YS
SIC Code:	723
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	6
Part. Matter 10 Micrometers & Smllr Tons/Yr:	3

Year:	2001
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	1101
Air District Name:	YS
SIC Code:	723
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	6
Part. Matter 10 Micrometers & Smllr Tons/Yr:	3

Year:	2002
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	1101
Air District Name:	YS
SIC Code:	723
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	6
Part. Matter 10 Micrometers & Smllr Tons/Yr:	2

Year:	2003
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV

Map ID	Site	Database(s)	EPA ID Number

RICE GROWERS ASSOCIATION OF CAL (Continued) **1000196926**

Facility ID:	1101
Air District Name:	YS
SIC Code:	723
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004
Carbon Monoxide Emissions Tons/Yr:	57
Air Basin:	SV
Facility ID:	1101
Air District Name:	YS
SIC Code:	723
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1.172413793
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0.34

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Central California
Facility ID:	57200005
Site Code:	100261
Assembly:	08
Senate:	05
Special Program:	Not reported
Status:	No Further Action
Status Date:	1990-12-27 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5802777777778
Longitude:	-121.511388888889
Alias Name:	57200005
	100261
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

RICE GROWERS ASSOCIATION OF CAL (Continued) **1000196926**

APN Description: Not reported
Comments: SITE SCREENING DONE RECOMMEND NO FURTHER ACTION REQUIRED AT PHOSTOXIN BURIAL SITE.SITE SCREENING DONE SCREENING DONE; RECOMMEND PRELIMINARY ASSESSMENT.PRELIM ASSESS DONE PRELIMINARY ENDANGERMENT ASSESSMENT REPORT SUBMITTED. SOIL REMOVAL CONDUCTED 4/24/90. SAMPLE RESULTS INDICATE ALL POINTS BELOW DETECTION LIMIT AT .1 PPB. RISK ASSESSMENT CONCLUDES DETECTION LIMIT IS BELOW HEALTH PROTECTIVE LEVEL.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 1990-12-27 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 1990-11-29 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 1988-03-11 00:00:00
Confirmed: 30048
Confirmed Description: Aluminum phosphide
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Media Affected: SOIL
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30048
Potenital Description: Aluminum phosphide
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: LANDFILL - HAZARDOUS WASTE

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63 **SACRAMENTO HOUSING & REDEVELOP. AGENCY** **DEED S101272815**
1920 FRONT STREET **HIST Cal-Sites N/A**
SACRAMENTO, CA 95814

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: ACTIVE
Deed Date(s): 11/07/06

HISTORICAL CAL-SITES:
Facility ID: 34240036
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06031994

Map ID	Site	Database(s)	EPA ID Number

SACRAMENTO HOUSING & REDEVELOP. AGENCY (Continued) **S101272815**

Status:	AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not Listed
SIC Code:	24
SIC Name:	MANU - LUMBER & WOOD PRODUCTS
Access:	Controlled
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
Staff Member Responsible for Site:	DMANDEL
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	CV
Region Water Control Board Name:	CENTRAL VALLEY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	09
State Senate District Code:	06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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64 **PG AND E SACRAMENTO SITE** **Manufactured Gas Plants** **1008407745**
2000 FRONT STREET **N/A**
SACRAMENTO, CA 95818

Manufactured Gas Plants:

The PG AND E Sacramento Site is a former manufactured gas plant that operated from 1873 to 1956 and produced gas from coal and petroleum as raw material. The contaminants found onsite are polycyclic aromatic hydrocarbons (PAH); total petroleum hydroccarbons (TPH); benzene, toluene, xylene, and ethylbenzene (B, T, X and E) and heavy metals in soil and groundwater. The site is currently paved to control soil migration and exposure

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64 **PG&E - SACRAMENTO SITE** **RESPONSE** **S101272813**
2000 FRONT STREET **DEED** **N/A**
SACRAMENTO, CA 95818 **ENVIROSTOR**
HIST Cal-Sites

AWP:

AWP Facility ID:	34490048
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	01011987
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	DMANDEL
Supervisor Responsible:	Not reported
SIC Code:	49
Facility SIC:	ELECTRIC, GAS & SANITARY SERVICES
RWQCB Code:	CV
RWQCB Associated With Site:	CENTRAL VALLEY
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34490048
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	6.4
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5S - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	SAM V. MARTINEZ JR.
Supervisor:	Richard Hume
Division Branch:	Central California
Site Code:	100160
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1987-01-01 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5722222
Longitude:	-121.5102777
Alias Name:	P12143
	CAD981415557
	009-0012-003
	34490048
	PACIFIC GAS & ELECTRIC - SACRAMENTO
	PG&E MANUFACTURED GAS PLANT SV-SA-SAC-1
	100160
Alias Type:	PCode
	EPA Identification Number
	Project Code (Site Code)
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Envirostor ID Number
APN
APN: 009-0012-003
APN Description: Not reported
Comments: The draft Focused Feasibility Study was submitted on behalf of Pacific Gas and Electric Company (PG&E) for the Front and T Streets Sites. DTSC comments are scheduled to be provided by March 21, 2007.From a Report of Completion Annual Workplan Activities dated 11/8/95: "IN COMPLIANCE WITH MAY 1991 RAP FOR THIS SITE, SOIL REMEDIATION WAS COMPLETED ON 8/18/95 WITH THE FINAL PLACEMENT OF AN ENGINEERED SITE CAP AND FENCING OF THE SITE PERIMETER. THRestrictions include no human habitation including residences hospitals, schools for persons under age 21, day-care centers, hotels, motels, or residences for employees. Property owner must maintain integrity of the cap that was placed pursuant toThe RP proposed a revised construction alternative for the final site cap, the document entitled " Ground Water Remedial Action Plan for the Sacramento Former Manufactured Gas Plant Site. The approval is found in the fourth paragraph of the SeptembRAW- The public comment period for the Draft Final Groundwater Engineering Evaluation/Cost Analysis (EE/CA) and Remedial Action Work Plan (RAW) for the Front & T Street Sites, Sacramento CA for the Front Street Joint Defense Group (JDG) ended on AprThe extraction and treatment system for the onsite portion of the plume was approved. The system will consist of 4 extraction wells placed along the perimeter in the NE corner of the Site. After extraction, GW will be treated with GAC, followed by dResponsible Party Preliminary Assessment conducted, reported to DHS. Sample results: Lead = 3000ppm, PNA = 500ppm. Site Screening Done: No documented clean-up.The Soil Vapor Extraction and Treatment System (SVETS) was constructed in 1999 to address contaminants present beneath the CalTrans and SMUD parcels. The evaluation presented indicates that the SVETS has had a minimal effect on the remediation andDTSC provided comments and direction for the revision of the Cap Plan.DES- The Soil Excavation Workplan is the soil removal "Design" that was specified in the May 1991 RAP. The Workplan presents the design to remove approximately 700 Cubic yards of polycyclic aromatic hydrocarbons (PAHs) contaminated soil from SacramWorkplan approved per letter dated 8/24/2005.RMDL/SHRA -- The satisfactory removal of all contaminated soil from the Sacramento Housing and Redevelopment Agency (SHRA) property as specified in the May 1991 Final Remedial Action Plan (RAP) for the Former Sacramento Manufactured Gas Plant Site.Enforceable Agreement H&SC 2535505(a)(1)(C), 205 and 205. The order required limiting access completing an in progress RI/FS, preparation of a RAP and implementation of the RAP.RMDL (GW1) Groundwater treatment plant for the site went online 8/25/95. The system includes 4 extraction wells, 4 reinjection wells, 3 observational piezometers and a carbon filter treatment plant. Groundwater Remediation Extraction Rate (gpd): upDTSC transmitted comments on the draft plan and requested a revised plan be submitted on March 30, 2007.This study was submitted 20 days later than expected.er 3, 1992 letter to PG&E captioned"Comments on Ground Water Design Report Pacific Gas and Electric, Sacramento County."isposal of POTW.E ENGINEERED CAP WILL BE MAINTAINED UNDER AN O&M AGREEMENT WHICH IS EXPECTED TO BE FINALIZED IN THE FIRST QUARTER OF 1996.Approximately 1200 cubic yards of polycyclic aromatic hydrocarbons (PAHs) contaminated soil from the SHRA property that borders the original PG&E manufactured gas plant.ento Housing and

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Redevelopment Agency (SHRA) property that borders the original PG&E manufactured gas plant.il 3, 2001 DTSC received no comment on the above mentioned document and therefore granted final approval for said RAW. The RAW calls for a monitored natural attenuation (MNA) remedy combined with continued operation of the pump and treat system on Pthe Remedial Action Plan for the site. This is the Date that the Deed Restriction was recorded in the official records of Sacramento County in Book 93 0519 at Page 1332.to 115,200 gal per day.is not performing as expected. The concentrations of the contaminants of concern detected in samples collected in 2005 are roughly equivalent to those detected in 1999. The proposal recommends the removal of the SVETS as it is not effective in attG&E Site. A contingent remedy, which will be implemented if Site conditions change, is also funded as a part of this RAW. Implementation of this RAW is designed to meet the groundwater cleanup objectives for all of the Front & T Street Sites. Thesaining the goals set forth in the Remedial Action Objectives set forth in either the Remedial Action Plan (RAP) or the Final Groundwater Engineering Evaluation/Cost Analysis and Remedial Action Workplan (EE/CA RAW). DTSC concurred with the prope Sites include: 1) PG&E Sacramento - Former MGP 2) CalTrans I-5, Q Street Offramp 3) SHRA - 1920 Front Street and 4) SMUD - Front and T Street.osal to decommission the SVETS and requested notification of the commencement of decommissioning and any deviation or modification from this proposal.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2001-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1993-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-03-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2001-10-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	2002-12-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1996-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1996-01-18 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1995-05-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-09-03 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Pilot Study Workplan
Completed Date:	2006-12-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Groundwater Monitoring Report
Completed Date:	2007-05-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Manual
Completed Date:	2007-08-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Manual
Completed Date:	2007-08-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Well Decommissioning Workplan
Completed Date:	2007-05-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-12-04 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1991-04-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1990-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-01-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2005-08-24 00:00:00
Confirmed:	30003,30019,30272,30550,30593
Confirmed Description:	Benzene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	Xylenes

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2008
Media Affected:	OTH, SOIL
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Management Required:	REM, ASP, DAY, LUC, NOWN, NUSE, NDEV, SCH, RES
Management Required Desc:	Activities prohibited which disturb the remedy and monitoring systems without approval
Management Required Desc:	Asphalt cover not to be disturbed without approval
Management Required Desc:	Day care center prohibited
Management Required Desc:	Land Use covenant
Management Required Desc:	Notify after change of property owner
Management Required Desc:	Notify prior to change in land use
Management Required Desc:	Notify prior to development
Management Required Desc:	Public or private school for persons under 21 prohibited
Management Required Desc:	Residence use prohibited
Potential:	30003, 30019, 30272, 30550, 30593
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Ethylbenzene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE
Status:	ACTIVE
Deed Date(s):	05/19/93

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	6.4
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5S - Central Valley
Lead Agency:	SMBRP
Program Manager:	SAM V. MARTINEZ JR.
Supervisor:	Richard Hume
Division Branch:	Central California
Facility ID:	34490048
Site Code:	100160
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1987-01-01 00:00:00
Restricted Use:	YES

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Funding: Responsible Party
Latitude: 38.5722222
Longitude: -121.5102777
Alias Name: P12143
CAD981415557
009-0012-003
34490048
PACIFIC GAS & ELECTRIC - SACRAMENTO
PG&E MANUFACTURED GAS PLANT SV-SA-SAC-1
100160
Alias Type: PCode
EPA Identification Number
Project Code (Site Code)
Alternate Name
Alternate Name
Envirostor ID Number
APN
APN: 009-0012-003
APN Description: Not reported
Comments: The draft Focused Feasibility Study was submitted on behalf of Pacific Gas and Electric Company (PG&E) for the Front and T Streets Sites. DTSC comments are scheduled to be provided by March 21, 2007.From a Report of Completion Annual Workplan Activities dated 11/8/95: "IN COMPLIANCE WITH MAY 1991 RAP FOR THIS SITE, SOIL REMEDIATION WAS COMPLETED ON 8/18/95 WITH THE FINAL PLACEMENT OF AN ENGINEERED SITE CAP AND FENCING OF THE SITE PERIMETER. THRestrictions include no human habitation including residences hospitals, schools for persons under age 21, day-care centers, hotels, motels, or residences for employees. Property owner must maintain integrity of the cap that was placed pursuant toThe RP proposed a revised construction alternative for the final site cap, the document entitled " Ground Water Remedial Action Plan for the Sacramento Former Manufactured Gas Plant Site. The approval is found in the fourth paragraph of the SeptembRAW- The public comment period for the Draft Final Groundwater Engineering Evaluation/Cost Analysis (EE/CA) and Remedial Action Work Plan (RAW) for the Front & T Street Sites, Sacramento CA for the Front Street Joint Defense Group (JDG) ended on AprThe extraction and treatment system for the onsite portion of the plume was approved. The system will consist of 4 extraction wells placed along the perimeter in the NE corner of the Site. After extraction, GW will be treated with GAC, followed by dResponsible Party Preliminary Assessment conducted, reported to DHS. Sample results: Lead = 3000ppm, PNA = 500ppm. Site Screening Done: No documented clean-up.The Soil Vapor Extraction and Treatment System (SVETS) was constructed in 1999 to address contaminants present beneath the CalTrans and SMUD parcels. The evaluation presented indicates that the SVETS has had a minimal effect on the remediation andDTSC provided comments and direction for the revision of the Cap Plan.DES- The Soil Excavation Workplan is the soil removal "Design" that was specified in the May 1991 RAP. The Workplan presents the design to remove approximately 700 Cubic yards of polycyclic aromatic hydrocarbons (PAHs) contaminated soil from SacramWorkplan approved per letter dated 8/24/2005.RMDL/SHRA -- The satisfactory removal of all contaminated soil from the Sacramento Housing and Redevelopment Agency (SHRA) property as specified in the May 1991 Final Remedial Action Plan (RAP) for the Former Sacramento Manufactured Gas Plant Site.Enforceable Agreement H&SC 2535505(a)(1)(C), 205 and 205. The

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

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Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2001-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1993-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-03-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Completed Document Type:	Remedial Design
Completed Date:	2001-10-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	2002-12-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1996-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1996-01-18 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1995-05-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-09-03 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Pilot Study Workplan
Completed Date:	2006-12-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Groundwater Monitoring Report
Completed Date:	2007-05-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Manual
Completed Date:	2007-08-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Manual
Completed Date:	2007-08-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Well Decommissioning Workplan
Completed Date:	2007-05-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-12-04 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1991-04-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1990-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Completed Date:	1989-01-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2005-08-24 00:00:00
Confirmed:	30003,30019,30272,30550,30593
Confirmed Description:	Benzene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2008
Media Affected:	OTH, SOIL
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Management Required:	REM, ASP, DAY, LUC, NOWN, NUSE, NDEV, SCH, RES
Management Required Desc:	Activities prohibited which disturb the remedy and monitoring systems without approval
Management Required Desc:	Asphalt cover not to be disturbed without approval
Management Required Desc:	Day care center prohibited
Management Required Desc:	Land Use covenant
Management Required Desc:	Notify after change of property owner
Management Required Desc:	Notify prior to change in land use
Management Required Desc:	Notify prior to development
Management Required Desc:	Public or private school for persons under 21 prohibited
Management Required Desc:	Residence use prohibited
Potential:	30003, 30019, 30272, 30550, 30593
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Ethylbenzene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

HISTORICAL CAL-SITES:

Facility ID:	34490048
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	01011987
Status:	AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency:	DTSC

Map ID	Site	Database(s)	EPA ID Number

PG&E - SACRAMENTO SITE (Continued) **S101272813**

Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 49
SIC Name: ELECTRIC, GAS & SANITARY SERVICES
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: DMANDEL
Supervisor Responsible for Site: Not reported
Region Water Control Board: CV
Region Water Control Board Name: CENTRAL VALLEY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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64 **PG&E FORMER MANUFACTURED GAS PLANT, SACRAMENTO** **Cortese** **S100833174**
2000 FRONT ST **CA BOND EXP. PLAN** **N/A**
SACRAMENTO, CA **SLIC**

Cortese:
Region: CORTESE
Facility Addr2: Not reported

CA BOND EXP. PLAN:
Reponsible Party: RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company: Not reported
Project Revenue Source Addr: Not reported
Project Revenue Source City,St,Zip: Not reported
Project Revenue Source Desc: It is expected that Pacific Gas and Electric Company will fund the site characterization and remedial action. DHS entered into an enforceable agreement with the responsible parties. DHS has budgeted $100,000 for oversight/monitoring of cleanup efforts. DHS will recover 100 percent of direct costs plus staff costs and overhead related to the project. The responsible parties will pay all costs associated with remedial investigations and cleanup activities.
Site Description: A former "City Gas Plant" or coal and crude oil gasification facility was located at this site. The former facility manufactured gas from coal and later used crude oil as a raw material.
Hazardous Waste Desc: Coal gasification facilities typically generated "coal tar" or "lamp black" residues. These residues contained compounds known as either Polynuclear Aromatic Hydrocarbons (PNA) or Polycyclic Aromatic Hydrocarbons (PAHs). These wastes were either sold for recycling purposes or used to fill in depressions or ponds and then covered or paved over with the wastes left in place.
Threat To Public Health & Env: The site is currently fenced and locked; access onto the site is controlled by PG&E. All exposed contaminant deposits have been paved to control migration and exposure. The avenues of exposure are ingestion of contaminated ground water and inhalation of contaminated dust or direct contact with contaminated soils.

Map ID	Site	Database(s)	EPA ID Number

PG&E FORMER MANUFACTURED GAS PLANT, SACRAMENTO (Continued) **S100833174**

Site Activity Status: Presently, inadvertent exposure is not probable since the contaminated shallow ground water is not used for domestic purposes. Exposure to contaminated soil would only occur if the asphaltic cap were disturbed during construction onsite. Pacific Gas and Electric Company has informed DHS that it is investigating a number of sites to determine if PNAs are present. PG&E has completed a major portion of the field work for the Remedial Investigation of the Sacramento site. The Feasibility Study Report is being prepared which will evaluate remedial alternatives.

SLIC:
Region: STATE
Global Id: SL205112995
Assigned Name: SLICSITE
Lead Agency Contact: CORI CONDON
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SL205112995
Responsible Party: P G & E
Recent Dtw: Not reported
Substance Released: CR, MET, PAH, PET
Facility Status: Not reported

SLIC:
Region: 5
Facility Status: Remediation Underway
Unit: Facility is a Spill or site
Pollutant: TPH, BTEX, PAH
Lead Agency: Not reported
Date Filed: 07/27/01
Report Date: 06/01/01
Date Added: Not reported
Date Closed: Not reported

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65 **SMUD, FRONT & T STREETS** **RESPONSE** **S101482984**
FRONT / T STREETS **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

AWP:
AWP Facility ID: 34490057
Region Code: 1
Region: SACRAMENTO
SMBR Branch Code: CC
SMBR Branch Unit: CENTRAL CALIFORNIA
Site Name.: Not reported
Current Status Date: 01011995
Current Status: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: responsible party
Awp Site Type: RESPONSIBLE PARTY
NPL: Not Listed
Tier Of AWP Site: Not reported
Source Of Funding: C
Responsible Staff Member: Not reported
Supervisor Responsible: Not reported
SIC Code: 49
Facility SIC: ELECTRIC, GAS & SANITARY SERVICES

Map ID	Site	Database(s)	EPA ID Number

SMUD, FRONT & T STREETS (Continued) **S101482984**

RWQCB Code:	CV
RWQCB Associated With Site:	CENTRAL VALLEY
Site Access Controlled:	Uncontrolled
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34490057
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	0.15
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5S - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	SAM V. MARTINEZ JR.
Supervisor:	Richard Hume
Division Branch:	Central California
Site Code:	100549
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1995-01-01 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5725
Longitude:	-121.51
Alias Name:	009-0042-006-0000 34490057 100549
Alias Type:	Project Code (Site Code) Envirostor ID Number APN
APN:	009-0042-006-0000
APN Description:	Not reported
Comments:	CEQA -- Prepared CEQA documents for a proposed Neg. Dec. Held a 30-day public comment period on the proposed project. Received no comments, so Neg. Dec. was finalized on 6/27/97. RAW/SOIL -- Completed Neg Dec under CEQA. Approved Removal Action WorThis study was submitted 20 days later than expected.RIFS/SOIL -- Completed a RI/FS for soil for the site. SMUD is working with CalTrans, who has an adjacent site, on a joint Removal Action Workplan.RAW - The pubilc comment period for the Draft Final Groundwater Engineering Evaluation/Cost Analysis (EE/CA) and Remedial Action Work Plan (RAW) for the Front & T Street sites, Sacramento, California for the Front Street Joint Defense Group (JDG) enRA/SOIL - Excavation and removal of 18,550 metric tons of soil contaminated with PAH's and BTEX.

Map ID	Site	Database(s)	EPA ID Number

SMUD, FRONT & T STREETS (Continued) **S101482984**

Excavation was back filled with clean material and a soil vapor extraction system was installed to remove contaminants below the depth of excavation. TFinal Deed Restriction sent to SMUD for signature and return to the Department.The draft Focused Feasibility Study was submitted on behalf of Pacific Gas and Electric Company (PG&E) for the Front and T Streets Sites. DTSC comments are scheduled to be provided by March 21, 2007.kplan, which includes excavation of approximately 12,200 cu yds of contaminated soil, installation of a season soil vapor extraction system and returned the surface to its original condition. This work is to be done jointly with CalTrans who is thehe excavation was done jointly with CALTRANS.ded on April 3, 2001. DTSC received no comment on the above mentioned document and therefore granted final approval for said RAW. The RAW calls for a monitored natural attenuation (MNA) remedy combined with continued operation of the pump and treaRP on the adjacent site.t system on PG&E site. A contingent remedy, which will be implemented if Site conditions change, is also funded as a part of this RAW. Implementation of this RAW is designed to meet the groundwater cleanup objectives for all of the Front & T Street sites. These sites include: 1) PG&E Sacramento- Former MGP 2) CalTrans I-5, Q Street Off-ramp 3) SHRA - 1920 Front Street and 4) SMUD - Front and T Street.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2001-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1997-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	1997-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Unilateral Order (I/SE, RAO, EPA AO)
Completed Date:	1995-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2006-11-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Pilot Study Report
Completed Date:	2006-12-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Groundwater Monitoring Report
Completed Date:	2007-05-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1999-06-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study

Map ID	Site	Database(s)	EPA ID Number

SMUD, FRONT & T STREETS (Continued) **S101482984**

Completed Date:	1997-06-16 00:00:00
Confirmed:	30003,30472,30025,30272,30550,30593
Confirmed Description:	Benzene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-gas
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2008
Media Affected:	OTH, SOIL
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30003, 30025, 30272, 30472, 30550, 30593
Potenital Description:	Benzene
Potenital Description:	TPH-gas
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	FUEL - VEHICLE STORAGE/ REFUELING, MANUFACTURED GAS PLANT, MANUFACTURING - LUMBER/WOOD PRODUCTS

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE
Status:	ACTIVE
Deed Date(s):	11/07/06

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	0.15
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5S - Central Valley
Lead Agency:	SMBRP
Program Manager:	SAM V. MARTINEZ JR.
Supervisor:	Richard Hume
Division Branch:	Central California
Facility ID:	34490057
Site Code:	100549
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1995-01-01 00:00:00

Map ID	Site	Database(s)	EPA ID Number

SMUD, FRONT & T STREETS (Continued) **S101482984**

Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5725
Longitude:	-121.51
Alias Name:	009-0042-006-0000 34490057 100549
Alias Type:	Project Code (Site Code) Envirostor ID Number APN
APN:	009-0042-006-0000
APN Description:	Not reported
Comments:	CEQA -- Prepared CEQA documents for a proposed Neg. Dec. Held a 30-day public comment period on the proposed project. Received no comments, so Neg. Dec. was finalized on 6/27/97. RAW/SOIL -- Completed Neg Dec under CEQA. Approved Removal Action WorThis study was submitted 20 days later than expected.RIFS/SOIL -- Completed a RI/FS for soil for the site. SMUD is working with CalTrans, who has an adjacent site, on a joint Removal Action Workplan.RAW - The pubilc comment period for the Draft Final Groundwater Engineering Evaluation/Cost Analysis (EE/CA) and Remedial Action Work Plan (RAW) for the Front & T Street sites, Sacramento, California for the Front Street Joint Defense Group (JDG) enRA/SOIL - Excavation and removal of 18,550 metric tons of soil contaminated with PAH's and BTEX. Excavation was back filled with clean material and a soil vapor extraction system was installed to remove contaminants below the depth of excavation. TFinal Deed Restriction sent to SMUD for signature and return to the Department.The draft Focused Feasibility Study was submitted on behalf of Pacific Gas and Electric Company (PG&E) for the Front and T Streets Sites. DTSC comments are scheduled to be provided by March 21, 2007.kplan, which includes excavation of approximately 12,200 cu yds of contaminated soil, installation of a season soil vapor extraction system and returned the surface to its original condition. This work is to be done jointly with CalTrans who is thehe excavation was done jointly with CALTRANS.ded on April 3, 2001. DTSC received no comment on the above mentioned document and therefore granted final approval for said RAW. The RAW calls for a monitored natural attenuation (MNA) remedy combined with continued operation of the pump and treaRP on the adjacent site.t system on PG&E site. A contingent remedy, which will be implemented if Site conditions change, is also funded as a part of this RAW. Implementation of this RAW is designed to meet the groundwater cleanup objectives for all of the Front & T Street sites. These sites include: 1) PG&E Sacramento- Former MGP 2) CalTrans I-5, Q Street Off-ramp 3) SHRA - 1920 Front Street and 4) SMUD - Front and T Street.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2001-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1997-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption

Map ID	Site	Database(s)	EPA ID Number

SMUD, FRONT & T STREETS (Continued) **S101482984**

Completed Date:	1997-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Unilateral Order (I/SE, RAO, EPA AO)
Completed Date:	1995-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2006-11-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Pilot Study Report
Completed Date:	2006-12-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Groundwater Monitoring Report
Completed Date:	2007-05-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1999-06-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-06-16 00:00:00
Confirmed:	30003,30472,30025,30272,30550,30593
Confirmed Description:	Benzene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-gas
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2008
Media Affected:	OTH, SOIL
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30003, 30025, 30272, 30472, 30550, 30593
Potenital Description:	Benzene
Potenital Description:	TPH-gas
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	FUEL - VEHICLE STORAGE/ REFUELING, MANUFACTURED GAS PLANT, MANUFACTURING - LUMBER/WOOD PRODUCTS

Map ID	Site	Database(s)	EPA ID Number

SMUD, FRONT & T STREETS (Continued) **S101482984**

HISTORICAL CAL-SITES:

Facility ID:	34490057
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	01011995
Status:	AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	RP
Type Name:	RESPONSIBLE PARTY
NPL:	Not Listed
SIC Code:	49
SIC Name:	ELECTRIC, GAS & SANITARY SERVICES
Access:	Uncontrolled
Cortese:	Not reported
Hazardous Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
Staff Member Responsible for Site:	Not reported
Supervisor Responsible for Site:	Not reported
Region Water Control Board:	CV
Region Water Control Board Name:	CENTRAL VALLEY
Lat/Long Direction:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Lat/Long Description:	Not reported
State Assembly District Code:	09
State Senate District Code:	06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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66 **PACIFIC GAS AND ELECTRIC CO** **Manufactured Gas Plants** **1008407744**
101 U STREET **N/A**
SACRAMENTO, CA 95818

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67 **723 "S" ST SITE (FORMER JUNKYARD), SACRAMENTO**** **HAZNET** **S101481894**
723 S ST **SLIC** **N/A**
SACRAMENTO, CA **ENVIROSTOR**

HAZNET:

Gepaid:	CAC001006776
Contact:	JEROME GILBERT
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	324 TAPPAN TERRACE
Mailing City,St,Zip:	ORINDA, CA 945630000
Gen County:	Sacramento

Map ID	Site	Database(s)	EPA ID Number

723 "S" ST SITE (FORMER JUNKYARD), SACRAMENTO (Continued)** **S101481894**

TSD EPA ID: AZD049318009
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Not reported
Tons: .3625
Facility County: Sacramento

SLIC:
Region: 5
Facility Status: Phase Two Remedial Investigation
Unit: Facility is a Spill or site
Pollutant: Cd, Cu, Pb, Zn
Lead Agency: SAC Co.
Date Filed: 07/05/94
Report Date: 06/24/94
Date Added: Not reported
Date Closed: Not reported

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Central California
Facility ID: 34990003
Site Code: Not reported
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 1994-07-28 00:00:00
Restricted Use: NO
Funding: Not reported
Latitude: 38.5713888888889
Longitude: -121.501111111111
Alias Name: 34990003
723 S STREET
Alias Type: Envirostor ID Number
Alternate Name
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Not reported
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Confirmed: NONE SPECIFIED
Confirmed Description: Not reported
Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported

Map ID	Site	Database(s)	EPA ID Number

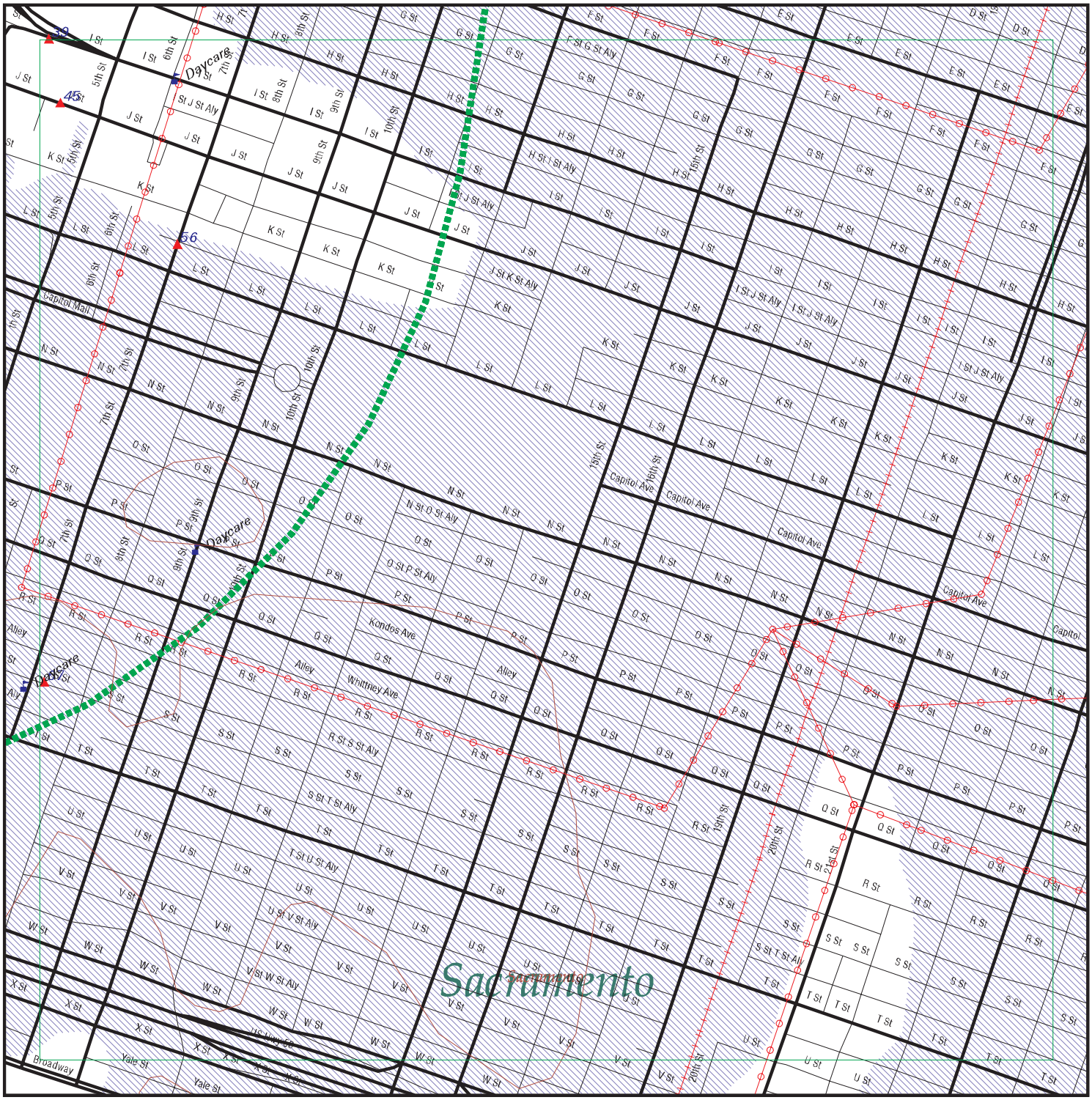
723 "S" ST SITE (FORMER JUNKYARD), SACRAMENTO (Continued)** **S101481894**

Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

FOCUS MAP 13 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LINCOLN	A100281853	BETTENDORF ENTERPRISES	1445 HIGHWAY 65	95691	AST
SAC	U001614199	H. ISHIMOTO FARMS	2645 HWY 16	95691	HIST UST
SACRAMENTO	S101628062	H. ISHIMOTO FARMS	2645 HIGHWAY 16	95691	CA FID UST, SWEEPS UST
SACRAMENTO	1003878554	SMUD NORTH CITY SUBSTA	20TH & N B STS	95814	CERC-NFRAP
SACRAMENTO	1003878854	SACRAMENTO MUNICIPAL LDFL	28TH & A ST	95814	CERC-NFRAP
SACRAMENTO	1010082283	HERITAGE DRY CLEANERS	13100 BLOCK OF MONO WAY	95814	CERCLIS
SACRAMENTO	1003879067	UNION CARBIDE CORP-LINDE DIV	CARBIDE CT	95814	CERC-NFRAP
SACRAMENTO	1003878883	PG&E GAS PLANT SACRAMENTO 206 2B	FOOT OF Y ST (NOW BROADWAY)	95818	CERC-NFRAP
SACRAMENTO	1003878752	WESTERN PACIFIC YD	NR FREEPORT BLVD & PORTOLA	95818	CERC-NFRAP
SACRAMENTO	1003878908	PG&E GAS PLANT SACRAMENTO 206 2	FRONT & T STS	95818	CERC-NFRAP
SACRAMENTO	S103678764	SMUD, FRONT & T STREETS	FRONT / T ST	95814	HAZNET, Cortese
SACRAMENTO	1005415623	SHELL SERVICE STATION	225 N JIBBON	95814	RCRA-SQG, FINDS, HAZNET
SACRAMENTO	S104795612	UNION PACIFIC RAILROAD	3675 W PACIFIC AVE	95818	HAZNET, Sacramento Co. CS, Sacramento Co. ML
SACRAMENTO	S101630671	EXXON SERVICE STATION	905 W PARK ST	95691	CA FID UST, SWEEPS UST
SACRAMENTO	U001614188	EXXON SERVICE STATION	905 PARK STREET W.	95691	HIST UST
SACRAMENTO	S101481621	CALTRANS, I-5 Q STREET OFF-RAMP	I-5 Q STREET OFF-RAMP	95814	RESPONSE, DEED, ENVIROSTOR, H Cal-Sites
SACRAMENTO	S105174026	STATE OFFICE BUILDING # 819	714 P ST (CASE # 2)	95814	LUST
SOUTHPORT	U001199955	PUBLIC WORKS BUILDING	210 11TH ST	95691	UST
W. SACRAMENTO	U001614238	RGA BYPRODUCTS COMPANY, INC.	120 S. RIVER ROAD	95691	HIST UST
WEST SACRAMENTO	U001614191	FRANK L. LANG	HWY 16 BOX 2630	95691	HIST UST
WEST SACRAMENTO	1010082372	IRONWORKS PARK BLOCK	BALLPARK DRIVE	95691	US BROWNFIELDS
WEST SACRAMENTO	S100204298	RIVERPOINT BUSINESS PARK	BETWN I-80, REED AVE, HARBOR BLVD.	95691	ENVIROSTOR
WEST SACRAMENTO	S101482956	SOUTHERN PACIFIC RIVERPOINT PROPERTY	BETWN I-80, HARBOR BLVD., / RR TRACKS	95691	ENVIROSTOR
WEST SACRAMENTO	U001614174	CLARENCE MATTOS	PO BOX 2535-HWY 16	95691	HIST UST
WEST SACRAMENTO	U003850915	P G & E - WINCHESTER LK	BURROWS/W OF JEFFERSON	95691	UST
WEST SACRAMENTO	1001217575	WORLD ENVIRONMENTAL AND ENERGY INC	3208 W CAPITOL AVE EASTSIDE	95691	PADS, RCRA-SQG, FINDS
WEST SACRAMENTO	U003850800	CAL-TRANS	W CAPITOL AVE	95691	UST
WEST SACRAMENTO	S107138462	TEXACO SERVICE STATION (FORMER)	WEST CAPITOL / THIRD STREET	95691	LUST
WEST SACRAMENTO	1010082352	CALTRANS LEASE PROPERTY	DREVER STREET	95691	US BROWNFIELDS
WEST SACRAMENTO	S105629031	BRIDGEWAY ISLAND ELEMENTARY	GOLDEN GATE DR/HALF MOON BAY CIRCLE/MARSHALL RD	95691	SCH, ENVIROSTOR
WEST SACRAMENTO	U004003829	NOR CAL ASSOC/KAUFMAN MANIKAS	JEFFERSON AT MARSHALL	95691	UST
WEST SACRAMENTO	U004004463	WILLOW POINT RANCH	JEFFERSON BLVD & WILLOW POINT	95691	UST
WEST SACRAMENTO	S101482951	TOMLIN'S SUNSHINE CLEANERS	612 MICHIGAN BLVD	95691	ENVIROSTOR
WEST SACRAMENTO	S105694082	FOOD & LIQUOR #119 (KAYO)	731 POPLAR ST (AKA: 1840 WEST CAPITOL)	95691	LUST
WEST SACRAMENTO	U004003776	LIGHTHOUSE MARINA - PHASE IB	CR RD-DISCOVERY PARK 156LE	95605	UST
WEST SACRAMENTO	U003895156	LIGHTHOUSE MARINA	136 S RIVER RD	95691	UST
WEST SACRAMENTO	U004003775	LIGHTHOUSE MARINA & RIVERBEND	S RIVER RD & CR 136	95691	UST
WEST SACRAMENTO	U004003744	J R MCCRAY PLASTERING INC	S RIVER RD RT 85	95691	UST
WEST SACRAMENTO	S107736287	STONEGATE ELEMENTARY SCHOOL	STONEGATE DRIVE AND LA JOLLA STREET	95691	SCH, ENVIROSTOR

Focus Map 14



EDR DataMap® - Environmental Atlas

West Sacramento EIP

Legend

- Roads
- Major Roads
- Contour Lines
- National Wetlands Inventory
- Waterways
- Railroads
- Study Boundary
- 100-Yr Flood Zones
- Powerlines
- Pipelines
- Fault Lines
- Indian Reservations BIA
- Water
- Superfund Sites
- Federal DOD Sites
- Listed Sites

N

0 1/8 1/4

Scale in Miles

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FOCUS MAP 14 SUMMARY

Database	Total Plotted
FEDERAL RECORDS	
NPL	0
Proposed NPL	0
Delisted NPL	0
NPL LIENS	0
CERCLIS	0
CERC-NFRAP	1
CORRACTS	1
RCRA TSD	1
RCRA Lg. Quan. Gen.	1
RCRA Sm. Quan. Gen.	0
ERNS	0
HMIRS	0
US ENG CONTROLS	0
US INST CONTROL	0
DOD	0
FUDS	0
US BROWNFIELDS	0
CONSENT	0
ROD	0
UMTRA	0
ODI	0
TRIS	0
TSCA	0
FTTS	0
SSTS	0
DOT OPS	0
DEBRIS REGION 9	0
ICIS	0
LUCIS	0
CDL	0
RADINFO	0
LIENS 2	0
HIST FTTS	0
PADS	0
MLTS	0
MINES	0
FINDS	1
RAATS	1
STATE AND LOCAL RECORDS	
Hist Cal-Sites	5
CA Bond Exp. Plan	3
SCH	0
Toxic Pits	0
State Landfill	0
CA WDS	0
WMUDS/SWAT	1

FOCUS MAP 14 SUMMARY

Database	Total Plotted
Cortese	1
SWRCY	0
LUST	2
CA FID UST	0
SLIC	3
UST	0
HIST UST	0
AST	0
LIENS	0
SWEEPS UST	0
CHMIRS	1
Notify 65	0
DEED	4
VCP	1
DRYCLEANERS	0
WIP	0
CDL	0
RESPONSE	6
HAZNET	2
EMI	1
HAULERS	0
ENVIROSTOR	10

TRIBAL RECORDS

INDIAN RESERV	0
INDIAN LUST	0
INDIAN UST	0

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	2

NOTES:

Sites may be listed in more than one database

Map ID	Site	Database(s)	EPA ID Number

39 **SP, SAC.-LOCOMOTIVE WORKS** **CA BOND EXP. PLAN** **S100833179**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver, CO
Project Revenue Source Desc:	The Department has budgeted $100,000 for oversight activities. The RP has agreed in the enforceable agreement to pay DHS oversight costs on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	This is an old locomotive works for the cleaning and refurbishing of coal and diesel engines and railcars. The works were established in 1865.
Hazardous Waste Desc:	Known contaminants in shallow ground water include heavy metals, petroleum hydrocarbons, inorganic solvents and organic solvents. Lead is a heavy metal of particular concern. Benzene is a likely petroleum hydrocarbon contaminant. Kerosene is a likely organic solvent contaminant. Another organic solvent likely to have contaminated the site is 1,1,1-trichloroethane.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds and freshwater fish. The site is located within one half mile of the Sacramento and American Rivers. Shallow ground water flow is predominantly to the East. Wells serving Bannon Street residents have been tested for organics and metals. Results showed all wells to be uncontaminated by organics and metals.
Site Activity Status:	An enforceable agreement has been implemented between DHS and the RP. A scoping document has been submitted by the RP. A work plan and schedule for investigation and cleanup was submitted October, 1988. A number of underground tanks have already been removed and have received closure approval by the RWQCB.

---

39 **UP, DOWNTOWN SAC - REDEVELOPMENT** **VCP** **S106568277**
401 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

VCP:

Facility ID:	34400011
Site Type:	Voluntary Cleanup
Site Type Detail:	Voluntary Cleanup
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100552
Assembly:	09
Senate:	06
Special Programs Code:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	38.5871791164659 / -121.499330555556
Alias Name:	0737720230 SOUTHERN PACIFIC TRANSPORTATION CO. 34400011 100552 SP, SAC - REDEVELOPMENT

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

ENVIROSTOR:

Site Type:	Voluntary Cleanup
Site Type Detailed:	Voluntary Cleanup
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Division Branch:	Central California
Facility ID:	34400011
Site Code:	100552
Assembly:	09
Senate:	06
Special Program:	Voluntary Cleanup Program
Status:	Active
Status Date:	1995-02-09 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5871791164659
Longitude:	-121.499330555556
Alias Name:	0737720230
	SOUTHERN PACIFIC TRANSPORTATION CO.
	34400011
	100552
	SP, SAC - REDEVELOPMENT
Alias Type:	EPA Identification Number
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The City of Sacramento, SPT Co, and the DTSC signed a Memorandum of Understanding (MOU) concerning remediation and redevelopment of the Sacramento Locomotive Works, Sacramento, California. The MOU was implemented to enable orderly and timely remediation and redevelopment of the railyards in a manner fully protective of human health and the environment.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Clean-up Agreement
Completed Date:	1995-01-05 00:00:00
Confirmed:	30013,30019,30024,30025,30027,30028,3002502
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	TPH-MOTOR OIL
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30013, 30019, 30024, 30025, 3002502, 30027, 30028
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - REDEVELOPMENT (Continued) **S106568277**

Potenital Description:	Vinyl chloride
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP

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39 **SOUTHERN PACIFIC TRANS CO** **FINDS** **1000409221**
401 I ST **RCRA-LQG** **CAD073772030**
SACRAMENTO, CA 95814 **RCRA-TSDF**
RAATS
SLIC
CORRACTS
CERC-NFRAP
Sacramento Co. CS
ENVIROSTOR
NY MANIFEST

FINDS:
Other Pertinent Environmental Activity Identified at Site

California - Hazardous Waste Tracking System - Datamart

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

RCRAInfo Corrective Action Summary:

Event:	Current Human Exposures under Control, Yes, Current Human Exposures Under Control has been verified. Based on a review of information contained in the EI determination, current human exposures are expected to be under control at the facility under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.
Event Date:	01/09/2004
Event:	Igration of Contaminated Groundwater under Control, More information is needed to make a determination.
Event Date:	01/10/2001
Event:	Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date:	01/10/2001
Event:	Igration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of information contained in the EI determination, it has been determined that migration of contaminated groundwater is under control at the facility. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

Map ID	Site	Database(s)	EPA ID Number
	SOUTHERN PACIFIC TRANS CO (Continued)		**1000409221**

Event Date: 04/06/1998

Event: Current Human Exposures under Control, Current human exposures are NOT under control.
Event Date: 04/06/1998

Event: Certification Of Remedy Completion Or Construction Completion
Event Date: 06/21/1994

Event: CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date: 04/25/1994

Event: Stabilization Measures Evaluation,This facility is amenable to stabilization activity based on the status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations.
Event Date: 04/25/1994

Event: Stabilization Measures Implemented, Groundwater extraction and treatment (e.g., to achieve groundwater containment, to achieve MCL).
Event Date: 10/20/1993

Event: Stabilization Construction Completed
Event Date: 04/05/1993

Event: Stabilization Measures Implemented, Primary measure is source removal and/or treatment (e.g., soil or waste excavation, in-situ soil treatment, off-site treatment).
Event Date: 01/15/1993

Event: Corrective Measures Design Approved
Event Date: 06/30/1992

Event: RFI Workplan Approved
Event Date: 01/27/1992

Event: RFI Workplan Approved
Event Date: 12/17/1991

Event: RFI Workplan Approved
Event Date: 10/18/1991

Event: Date For Remedy Selection (CM Imposed)
Event Date: 12/07/1989

Event: CMS Approved
Event Date: 04/30/1989

Event: RFI Approved
Event Date: 02/28/1989

Event: RFI Workplan Approved
Event Date: 01/31/1989

Event: CMS Workplan Approved
Event Date: 01/31/1989

Event: CA Prioritization, Facility or area was assigned a high corrective action priority.
Event Date: 08/08/1988

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Event: RFI Imposition
Event Date: 06/02/1988

RCRAInfo:
Owner: NAME NOT REPORTED
(415) 555-1212
EPA ID: CAD073772030

Contact: Not reported

Classification: Large Quantity Generator, TSDF
TSDF Activities: Not reported

Violation Status: Violations exist

Regulation Violated: 262.50-60
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 264.10-18.B
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.30-34.C
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 11/07/1994
Actual Date Achieved Compliance: 11/14/1994

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/08/1994
Penalty Type: Not reported

Regulation Violated: 262.10-12.A
Area of Violation: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.90-94.F
Area of Violation: TSD-GOUNDWATER MONITORING REQUIREMENTS
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 264.170-177.I
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/21/1991
Actual Date Achieved Compliance: 07/25/1992

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Enforcement Action: INITIAL 3008(A) COMPLIANCE ORDER
Enforcement Action Date: 11/08/1991
Penalty Type: Proposed Monetary Penalty

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/19/1991
Actual Date Achieved Compliance: 06/01/1991

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 05/01/1991
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 03/12/1990
Actual Date Achieved Compliance: 06/01/1990

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 04/26/1990
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 01/30/1989
Actual Date Achieved Compliance: 04/13/1989

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 03/16/1989
Penalty Type: Not reported

Regulation Violated: 270
Area of Violation: TSD-OTHER REQUIREMENTS (OVERSIGHT)
Date Violation Determined: 10/06/1987
Actual Date Achieved Compliance: 12/28/1987

Enforcement Action: WRITTEN INFORMAL
Enforcement Action Date: 11/16/1987
Penalty Type: Not reported

Regulation Violated: 264.140-150.H
Area of Violation: TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS
Date Violation Determined: 09/19/1986
Actual Date Achieved Compliance: 12/16/1987

Penalty Summary:

Penalty Description	Penalty Date	Penalty Amount	Lead Agency
Final Monetary Penalty	11/8/1991	70000	STATE
Proposed Monetary Penalty	11/8/1991	125500	STATE

There are 11 violation record(s) reported at this site:

Evaluation	Area of Violation	Date of Compliance
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19941114
	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19941114
Compliance Evaluation Inspection	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19920725
	TSD-GOUNDWATER MONITORING REQUIREMENTS	19920725
	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19910601
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19900601

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19890413
Compliance Evaluation Inspection	TSD-OTHER REQUIREMENTS (OVERSIGHT)	19871228
Non-Financial Record Review	TSD-FINANCIAL RESPONSIBILITY REQUIREMENTS	19871216

SLIC:

Region:	STATE
Global Id:	SLT5S2473286
Assigned Name:	SLICSITE
Lead Agency Contact:	CORI CONDON
Lead Agency:	CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number:	SLT5S247
Responsible Party:	SAC. HOUSING & REDEVELOPMENT AGENCY
Recent Dtw:	Not reported
Substance Released:	VOC
Facility Status:	**Case Open**

CORRACTS:

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/09/2004
Action:	CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA750IN - Migration of Contaminated Groundwater under Control, More information is needed to make a determination
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	ENTIRE FACILITY
Actual Date:	01/10/2001
Action:	CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	CENTRAL SHOPS AREA
Actual Date:	01/15/1993
Action:	CA600SR - Stabilization Measures Implemented, Primary measure is source removal and/or treatment
NAICS Code(s):	Not reported

EPA ID:	CAD073772030
EPA Region:	09
Area Name:	SOUTH PLUME AREA
Actual Date:	01/27/1992
Action:	CA150 - RFI Workplan Approved
NAICS Code(s):	Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA300 - CMS Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 01/31/1989
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 02/28/1989
Action: CA200 - RFI Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 04/05/1993
Action: CA650 - Stabilization Construction Completed
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA725NO - Current Human Exposures Under Control, Current human exposures are NOT under control
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/06/1998
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 04/25/1994
Action: CA225YE - Stabilization Measures Evaluation, This facility ,is

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

amenable to stabilization activity based on the, status of corrective action work at the facility, technical factors, the degree of risk, timing considerations and administrative considerations
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 04/30/1989
Action: CA350 - CMS Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 06/02/1988
Action: CA100 - RFI Imposition
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/21/1994
Action: CA550 - Certification Of Remedy Completion Or Construction Completion
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 06/30/1992
Action: CA450 - Corrective Measures Design Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 08/08/1988
Action: CA075HI - CA Prioritization, Facility or area was assigned a high corrective action priority
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: CENTRAL SHOPS AREA
Actual Date: 10/18/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: SOUTH PLUME AREA
Actual Date: 10/20/1993
Action: CA600GW - Stabilization Measures Implemented, Groundwater extraction and treatment
NAICS Code(s): Not reported

EPA ID: CAD073772030

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

EPA Region: 09
Area Name: SACRAMENTO STATION AREA
Actual Date: 12/07/1989
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): Not reported

EPA ID: CAD073772030
EPA Region: 09
Area Name: LAGOON/NORTH PLUME AREA
Actual Date: 12/17/1991
Action: CA150 - RFI Workplan Approved
NAICS Code(s): Not reported

CERC-NFRAP:
Site ID: 0901569
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP

CERCLIS-NFRAP Site Contact Name(s):
Contact Name: Matt Mitguard
Contact Tel: (415) 972-3096
Contact Title: Site Assessment Manager (SAM)

Contact Name: Jere Johnson
Contact Tel: (415) 972-3094
Contact Title: Site Assessment Manager (SAM)

CERCLIS-NFRAP Site Alias Name(s):
Alias Name: SACRAMENTO LOCOMOTIVE WORKS
Alias Address: Not reported
CA
Alias Name: UNION PACIFIC RR - SACRAMENTO
Alias Address: Not reported
CA
Alias Name: SO PACIFIC
Alias Address: Not reported
CA
Alias Name: SOUTHERN PACIFIC LOCOMOTIVE WORK
Alias Address: Not reported
CA
Site Description: Not reported

CERCLIS-NFRAP Assessment History:
Action: DISCOVERY
Date Started: Not reported
Date Completed: 08/01/1980
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: 05/01/1984
Date Completed: 02/01/1985
Priority Level: Low

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Date Completed: 05/01/1988
Priority Level: Low

Action: SITE INSPECTION
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Action: ARCHIVE SITE
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: Not reported
Date Completed: 08/08/1989
Priority Level: NFRAP (No Futher Remedial Action Planned

Sacramento Co. CS:
Region: SACRAMENTO
State Site Number: 0379
Lead Staff: ERIKSON, S.
Lead Agency: L
Remedial Action Taken: 1
Substance: Heater Fuel
Date Reported: 6/4/1991
Facility Id: RO0001105
Case Type: Other ground water affected
Case Closed: Y
Date Closed: 7/21/1997

ENVIROSTOR:
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Central California
Facility ID: 34720169
Site Code: Not reported
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Refer: Other Agency
Status Date: 1995-07-21 00:00:00
Restricted Use: NO
Funding: Not reported
Latitude: 38.5713888888889
Longitude: -121.505833333333
Alias Name: 34720169
Alias Type: Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Comments:	FACILITY IDENTIFIED INACTIVE #240. FACILITY DRIVE-BY DRIVE-BY-ACTIVE SITE. QUESTIONNAIRE RECEIVED.SITE SCREENING DONE.NEED MORE INFORMATION.Site Screening completed. County provided oversight of investigation and remediation in 1991 & 1992. Refer site to County.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1981-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1995-07-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Screening
Completed Date:	1987-03-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

NY MANIFEST:

Document ID:	NYB2633598
Manifest Status:	Completed copy
Trans1 State ID:	10222PNY
Trans2 State ID:	Not reported
Generator Ship Date:	930126
Trans1 Recv Date:	930126
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	930209
Part A Recv Date:	930211
Part B Recv Date:	930219
Generator EPA ID:	CAD073772030
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID:	NYD000632372
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Quantity:	00014
Units:	P - Pounds
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

Map ID	Site	Database(s)	EPA ID Number

SOUTHERN PACIFIC TRANS CO (Continued) **1000409221**

Year:	93
Manifest Tracking Num:	Not reported
Import Ind:	Not reported
Export Ind:	Not reported
Discr Quantity Ind:	Not reported
Discr Type Ind:	Not reported
Discr Residue Ind:	Not reported
Discr Partial Reject Ind:	Not reported
Discr Full Reject Ind:	Not reported
Manifest Ref Num:	Not reported
Alt Fac RCRA Id:	Not reported
Alt Fac Sign Date:	Not reported
Mgmt Method Type Code:	Not reported
EPA ID:	CAD073772030
Facility Name:	SOUTHERN PACIFICTRANSPORTATION
Facility Address:	401 I STREET
Facility City:	SACRAMENTO
Facility Address 2:	Not reported
Country:	USA
County:	Not reported
Mailing Name:	SOUTHERN PACIFICTRANSPORTATION
Mailing Contact:	JIM DIEL
Mailing Address:	401 I STREET
Mailing Address 2:	Not reported
Mailing City:	SACRAMENTO
Mailing State:	CA
Mailing Zip:	Not reported
Mailing Zip4:	Not reported
Mailing Country:	USA
Mailing Phone:	916-781-5217

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39 **SPRR-SACRAMENTO LOCOMOTIVE** **Sacramento Co. CS** **S104795582**
401 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	DT002
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	R
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000635
Case Type:	FAUX
Case Closed:	N
Date Closed:	**Not reported**

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - LAGOON** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **DEED** **ENVIROSTOR** **HIST Cal-Sites**	**S105954434** **N/A**

AWP:

AWP Facility ID:	34400008
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - LAGOON
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400008
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Funding:	Responsible Party
Latitude:	38.5919493975904
Longitude:	-121.498025
Alias Name:	34400004 UP, DOWNTOWN SAC - LAGOON SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400008 SP-SAC - LOCOMOTIVE WORKS SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - LAGOON
Alias Type:	Envirostor ID Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

	2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	1,4-Dioxane
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: ACTIVE
Deed Date(s): 07/11/01

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 40
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400008
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Active
Status Date: 1992-06-03 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5919493975904
Longitude: -121.498025

Alias Name:	34400004
	UP, DOWNTOWN SAC - LAGOON
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400008
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - LAGOON
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE LAGOON STUDY AREA (LSA) IS APPROXIMATELY 434 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE LSA WAS UTILIZED

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UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

FOR AS AN INDUSTRIAL WASTEWATER LAGOON, OIL/CEQA/NOD--An NOD was approved for actions selected under a Remedial Action Plan Amendment prepared for soil remediation of an 11 acre Northwestern portion of the Lagoon Study Area. DTSC prepared an Initial Study Agency Checklist which relies on theCEQA - The DTSC issued the Notice of Determination for the Lagoon Study Area Final RAP, approved remedial alternative on December 30, 1999.CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP) for Soil, and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) for Soil.Implementation Plan ApprovedAsbestos Contingency PlanThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activFinal Amended RAP approved for soilRAP -- DTSC APPROVED THE FINAL RAP, DATED 12/28/98, APPROVED 12/30/98, FOR THE LSA 51 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD SITE. THE APPROVED ALTERNATIVE FOR REMEDIATION FOR THE 239,640 CUBIC YARDS OF CONTAMINATED SOILS IDENTIFIED IN THERIFS -- Soil FS approved. LSA represents 51 acres of the 240 acre SPTCo-Sacramento Rail Yard. The approved RIFS has initially identified 51,965 cubic yards of contaminated soils that will require offsite disposal and 187,675 cubic yards of contamRA (LSARA) -- The Interim Remedial Measure (IRM) is being implemented for remediation of soil contaminated with Volatile Organic Compounds (VOC's), Semi-Volatile Organic Compounds (SVOC's), and metals from operation and maintenance activities at thCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRAP/NWLSA--DTSC approved a RAP amendment for soil cleanup of an 11 acre portion of the Lagoon Study Area (LSA) of the railyard site. The Amendment to the 2000 Final Amended Industrial Wastewater Lagoon Remedial Action Plan for Soil changes the remeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) for Soil on May 22, 2000, for the Lagoon Study Area, 51 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 239,640RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction acubic yards of contaminated soils consists of excavation, ex-situ vapor extraction, chemical stabilization and, off-site disposal. Imple-mentation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The prelimCity of Sacramento EIRs prepared for redevelopment projects which includes the Railyard. The NOD and supporting evaluations were made available for public review for 30 days from 2/25/03 to 3/27/03 and was presented at the 3/11/03 public meeting hes RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/e SPTCo-Sacramento Rail Yard. The IRM consists of excavation remediation of approximately 2500 cubic yards of contaminated soils from the Industrial Waste Water Lagoon. The contaminated soil will be stockpiled and treated at the Drum Storage Areainated soils that will be disposed of onsite. The onsite disposal alternative includes design and construction of an onsite 450,000 cubic yard solid waste landfill, primarily designed for relatively intert metals contaminated soils. The landfill wRAP IS EXCAVATION, EX-SITU VAPOR EXTRACTION, CHEMICAL STABILIZATION, ONSITE SECURE CONTAINMENT AND OFFSITE DISPOSAL. THE ONSITE DISPOSAL ALTERNATIVE INCLUDES DESIGN AND CONSTRUCTION OF AN ONSITE, 450,000 CUBIC YARD SOLD WASTE LANDFILL, PRIMARILY DESWATER SEPERATOR OVERFLOW AREA, AND FORMER LOCATION OF A 50,000 GALLON OIL STORAGE TANK. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOdy for the northwestern corner of the LSA from excavation and offsite disposal to grading and capping with an engineered paved cover. Land use will be limited under a deed restriction. In compliance with CEQA, DTSC has prepared a Notice of DeterminIGNED FOR RELATIVELY INERT METALS CONTAMINATED SOILS. THE LANDFILL WILL BE DESIGNED AND CONSTRUCTED AS A CLASS II LANDFILL. THE ONSITE LANDFILL HAS BEEN APPROVED WITH THE FOLLOWING REQUIREMENTS: NO LIQUIDS MAY BE DISPOSED ONSITE, ALL METAL CONTAMINAMarch 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ld at the Sacramento Amtrak Depot. A notice was displayed in the Sacramento Bee newspaper and a fact sheet was mailed to the site mailing list to provide information and announce the review period and a public meeting.03. Public comments were received by DTSC and addressed through a responsiveness summary.ill be designed and constucted as a Class II landfill. The onsite landfill has been approved with the following requirements: no liquids may be disposed of onsite, all metal contaminated soils with organics may only be placed in the landfill if thinary costs of the remediation is estimated to be $17,115,480.UNDS SVOCs, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA, AND CAR SHOP NINE STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.(DSA utilizing the existing DSA soil vapor extraction and treatme system to remediate VOC contamination. The VOC remediated soils will then be chemically stabilized/solidified to treat SVOC and metal contamination. The remediated/stabilized soil wation (NOD) for this project. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.ill then be disposed of at the ECDC Utah Landfill.TED SOILS WITH ORGANICS MAY ONLY BE PLACED IN THE LANDFILL IF THE ORGANIC CONSTITUENTS ARE ALL LESS THAN THRESHOLD VALUES, NO RCRA WASTES, AND NO CALIFORNIA HAZARDOUS WASTE THAT HAS NOT BEEN CLASSIFIED AS DESIGNATED WASTE. IMPLEMENTATION OF THE SELe organic constituents are all less than threshold values, no RCRA waste, and no California Hazardous Waste that has not been classified as designated waste. The preliminary cost of the proposed alternative, Alternative H, is $20,315,000. The final RAP is scheduled for

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

completion in September 1998.ECTED ALTERNATIVE IS SCHEDULED TO BEGIN IN APRIL OF 2000 AND TO CONTINU THROUGH OCTOBER OF 2005. THE PRELIMINARY COST OF THE PROPOSED ALTERNATIVE IS EXTIMATED TO BE $20,315,000.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Neg. Declaration
Completed Date:	2006-09-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1998-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan Addendum (RAP)
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2007-03-28 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-10-06 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1997-11-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan w/ESD (RAP)
Completed Date:	2006-09-13 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2007-06-06 00:00:00
Confirmed:	10196,10199,30001,30003,10002,30013,10060,10064,10097,30472,30473,3047 ,30475,30476,30477,30478,30479,30480,30481,30482,30483,30484,30485,300 2,30024,30025,30026,30027,30028,30246,30272,30550,3002502,30593
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* OTHER ORGANIC SOLIDS
Confirmed Description:	* CONTAMINATED SOIL
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	1,4-Dioxane
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2034
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10064, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30246, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* OTHER ORGANIC SOLIDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Potenital Description: Tetrachloroethylene (PCE)
Potenital Description: TPH-diesel
Potenital Description: TPH-gas
Potenital Description: TPH-MOTOR OIL
Potenital Description: 1,1,1-Trichloroethane (TCA)
Potenital Description: Trichloroethylene (TCE)
Potenital Description: Vinyl chloride
Potenital Description: 1,4-Dioxane
Potenital Description: Ethylbenzene
Potenital Description: Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description: Acenaphthene
Potenital Description: Anthracene
Potenital Description: Benz[a]anthracene
Potenital Description: Benzo[b]fluoranthene
Potenital Description: Benzo[k]fluoranthene
Potenital Description: Benzo[a]pyrene
Potenital Description: Chrysene
Potenital Description: Dibenz[ah]anthracene
Potenital Description: Fluoranthene
Potenital Description: Fluorene
Potenital Description: Indeno[1,2,3-cd]pyrene
Potenital Description: Naphthalene
Potenital Description: Pyrene
Potenital Description: Toluene
Potenital Description: Xylenes
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400008
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - LAGOON
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - LAGOON (Continued) **S105954434**

Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD** **LUST** **S101300908**
401 I ST **Cortese** **N/A**
SACRAMENTO, CA **WMUDS/SWAT**
SLIC
EMI

LUST:
Region: STATE
Case Type: Drinking Water Aquifer affected
Cross Street: Not reported
Enf Type: None Taken
Funding: Not reported
How Discovered: Not reported
How Stopped: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Global Id: T0606700084
Stop Date: Not reported
Confirm Leak: Not reported
Workplan: Not reported
Prelim Assess: Not reported
Pollution Char: Not reported
Remed Plan: Not reported
Remed Action: Not reported
Monitoring: Not reported
Close Date: 2000-04-28 00:00:00
Discover Date: Not reported
Enforcement Dt: 1965-01-01 00:00:00
Release Date: 1987-07-31 00:00:00
Review Date: 2000-04-28 00:00:00
Enter Date: 1988-09-06 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Gasoline
Contact Person: Not reported
Responsible Party: SOUTHERN PACIFIC TRANSPO
RP Address: Not reported
Interim: Not reported
Oversight Prgm: LUFT
MTBE Class: *

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

MTBE Conc: 0
MTBE Fuel: 1
MTBE Tested: Site NOT Tested for MTBE.Includes Unknown and Not Analyzed.
Staff: VJF
Staff Initials: DWB
Lead Agency: Regional Board
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 340118
Qty Leaked: Not reported
Abate Method: Not reported
Operator: Not reported
Water System Name: TWO RIVERS RV PARK
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: W0603900814
Waste Disch Assigned Name: 2000814-001GEN
Summary: SEE SLIC FOR FILES & REPORTS

LUST:
Region: 5
Case Number: 340118
Staff Initials: VJF
Substance: GASOLINE
Case Type: Drinking Water Aquifer affected
Status: Case Closed
Lead Agency: Regional
Program: LUFT
MTBE Code: N/A

Cortese:
Region: CORTESE
Facility Addr2: 401 I ST

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Region: CORTESE
Facility Addr2: Not reported

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Region: CORTESE
Facility Addr2: Not reported

WMUDS/SWAT:
Edit Date: Not reported
Complexity: Not reported
Primary Waste: Contaminated Soil
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Base Meridian: Not reported
NPID: Not reported
Tonnage: 0
Regional Board ID: Not reported
Municipal Solid Waste: False
Superorder: False
Open To Public: False
Waste List: False
Agency Type: Private
Agency Name: SO. PAC. TRANSPORTATION CO.
Agency Department: Not reported
Agency Address: 1 MARKET PLAZA
Agency City,St,Zip: SAN FRANCISCO CA 94105
Agency Contact: MARK RANSOM
Agency Telephone: 4155411495
Land Owner Name: Not reported
Land Owner Address: Not reported
Land Owner City,St,Zip: Not reported
Land Owner Contact: Not reported
Land Owner Phone: Not reported
Region: 5S
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Description: Not reported
Facility Telephone: Not reported
SWAT Facility Name: Not reported
Primary SIC: 4011
Secondary SIC: Not reported
Comments: Not reported
Last Facility Editors: Not reported
Waste Discharge System: True
Solid Waste Assessment Test Program: False
Toxic Pits Cleanup Act Program: False
Resource Conservation Recovery Act: True
Department of Defence: False
Solid Waste Assessment Test Program: Not reported
Threat to Water Quality: Not reported
Sub Chapter 15: False
Regional Board Project Officer: AMM
Number of WMUDS at Facility: 1

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Section Range: Not reported
RCRA Facility: No
Waste Discharge Requirements: Historical - Any regulated facility for which the Regional Board has rescinded all WDRs or consciously allowed an NPDES permit to expire.
Self-Monitoring Rept. Frequency: Monthly Submittal
Waste Discharge System ID: 5A342000N01
Solid Waste Information ID: Not reported

SLIC:
Region: STATE
Global Id: SL205072992
Assigned Name: SLICSITE
Lead Agency Contact: STEVEN W. MEEKS
Lead Agency: CENTRAL VALLEY RWQCB (REGION 5S)
Lead Agency Case Number: SL205072992
Responsible Party: UNION PACIFIC RAILROAD COMPANY
Recent Dtw: 14.5
Substance Released: CR, MET, PET, SVO, VOC
Facility Status: Not reported

SLIC:
Region: 5
Facility Status: R I/FS/REM
Unit: Facility is a Spill or site
Pollutant: VOCs ,TPH, metals
Lead Agency: WTE
Date Filed: / /
Report Date: / /
Date Added: Not reported
Date Closed: Not reported

EMI:
Year: 1987
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 55
Reactive Organic Gases Tons/Yr: 35
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
Carbon Monoxide Emissions Tons/Yr: 34
Air Basin: SV
Facility ID: 38
Air District Name: SAC
SIC Code: 4742
Air District Name: SACRAMENTO METROPOLITAN AQMD

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	17
Reactive Organic Gases Tons/Yr:	12
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
Carbon Monoxide Emissions Tons/Yr:	34
Air Basin:	SV
Facility ID:	38
Air District Name:	SAC
SIC Code:	4742
Air District Name:	SACRAMENTO METROPOLITAN AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

Map ID	Site	Database(s)	EPA ID Number

UNION PACIFIC RAILROAD-SACRAMENTO RAILYARD (Continued) **S101300908**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

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39 **SP, SAC. - BATTERY SHOP** **CA BOND EXP. PLAN** **S100833177**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Denver and Rio Grande Railroad/Southern Pacific Transportation Co.
Project Revenue Source Addr:	Not reported
Project Revenue Source City,St,Zip:	Denver/San Francisco, CO/CA
Project Revenue Source Desc:	The Department has budgeted $50,000 for oversight of the responsible parties cleanup activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	The site encompasses three RCRA sites under one Court Order. The Court Order time schedule was included in an Enforceable Agreement dated June 2, 1988. These entail (a) a battery storage and disposal area (including dry well disposal), (b) a 2000 square foot drum storage area (containing solvents) and (c) a grit blast waste pile area (containing over 3100 cubic yards of sand).
Hazardous Waste Desc:	Contaminants include (a) copper, lead and petroleum hydrocarbons at the grit blast area, (b) lead and acids at the battery storage and disposal area, and (c) lead and organic compounds at the drum storage area.
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact at all three locations. Potential receptors include humans, mammals, birds and freshwater fish. The site is within one half mile of the Sacramento and American Rivers, and seasonal fluctuation of shallow ground water direction has been confirmed.
Site Activity Status:	A third round of soil and ground water sampling was completed in September, 1988. Results from these investigations will be used to modify the analysis of remedial alternatives presented in March, 1988. A Court Order was signed July 30, 1987. The Order set a time schedule for a combined RAP/RCRA Closure. The time schedule in the Court Order was included in an enforceable agreement with DHS dated June 2, 1988. As an interim remedial measure it is proposed to centralize contaminated soils from the Battery Shop, Drum Storage and Sand Pile sites. Stockpiled wastes will be tarped. Drainage will also be collected down slope. Wastes will be stockpiled above visqueen to prevent percolation.

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39 **SP, SAC - BATTERY SHOP YARD** **RESPONSE** **S100351390**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34360065
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-21 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5866983935742
Longitude:	-121.502530555556
Alias Name:	34400004 CAD073772030 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION COMPANY SP-SAC - BATTERY SHOP SP, SAC - BATTERY SHOP YARD SP-SAC - OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 34360065 SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number EPA Identification Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10097, 10119, 30013, 30407
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	Lead
Potenital Description:	Nickel
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	BATTERY STORAGE

DEED:
Area: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 06/28/90

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34360065
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-21 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5866983935742
Longitude: -121.502530555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION COMPANY	Alternate Name
SP-SAC - BATTERY SHOP	Alternate Name
SP, SAC - BATTERY SHOP YARD	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
34360065	Envirostor ID Number
SP-SAC - LOCOMOTIVE WORKS	Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: 5YEAR -- THE 5-YEAR REVIEW FOR THE SOUTHERN PACIFIC TRANSPORTATION COMPANY, SACRAMENTO (SPTCO) BATTERY SHOPS STUDY AREA (BSSA) HAS BEEN REVIEWED AND APPROVED BY THE DEPARTMENT. THE REPORT WAS COMPLETED AS A TYPE IA REVIEW, AS RECOMMENDED BY DTSC ANThe deed restriction allows all uses of the property, although if the property is to be used for residential or educational purposes at ground level or the public as unimproved land (eg., park, open space, gardening), the

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

owners and occupants shallThe Final RAP /Closure Plan (RAP/CP) for the Battery Shops has been adopted and DTSC determined the that the RAP/COP satisfactorily addresses all applicable state and federal statutes and regulations.DHS gives Remedial Action Order.Certified. Excavation and disposal of 262 tons of soil at class I landfill. Cleanup level of 950 mg of lead/kg soil was met.The DTSC approved the Closure Report for the Former Battery Shop Yard, Sacramento Locomotive Works dated June 18, 1990take action so that public is not exposed to concentrations of lead greater than 174 mg/kg (or other standard determined by the Department to be protective of public health and the environment). The deed restriction limits excavation and disposal ofD CONSISTENT WITH OSWER DIRECTIVE 9355.7-02A. THE IA REVIEWS ARE APPLICABLE FOR SITES WHERE CLOSURE IS NOT COMPLETE AND NO SPECIAL CIRCUMSTANCES HAVE ARISEN SINCE THE REMEDIAL ACTION WAS PERFORMED THE BSSA SOILS WERE EXCAVATED AND DISPOSED OF OFFSIsoil without Department approval, and does not allow disturbance of the 2-foot clean soil cap.TE TO REMEDIAT LEAD, CHROMIUM, AND ARSENIC SOIL CONTAMINATION FROM DISPOSAL OF SPENT BATTERY ACID INTO ONSITE DRY WELLS. AS PART OF THE APRIL 1990 FINAL REMEDIAL ACTION PLAN FOR BSSA, SPTCO WAS REQUIRED TO INSTALL AND MONITOR 5 GROUNDWATER MONITORING WELLS IN THE UPPER SAND ZONE TO EVALUATE THE POTENTIAL SOIL CONTAMINATION FROM THE BSSA IMPACTING GROUNDWATER. BASED ON THE REVIEW OF THE GROUND WATER MONITORING DATA, THE REMEDIATION PERFORMED FOR THE BSSA IS MEETING THE OBJECTIVE OF THE BSSA RAP/CP.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1990-06-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1990-04-26 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1990-06-25 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	5 Year Review Reports
Completed Date:	1998-04-09 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - BATTERY SHOP YARD (Continued) **S100351390**

Management Required Desc: Not reported
Potential: 10097, 10119, 30013, 30407
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * ACID SOLUTION 2>PH WITH METALS
Potenital Description: Lead
Potenital Description: Nickel
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: BATTERY STORAGE

HISTORICAL CAL-SITES:
Facility ID: 34360065
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06211990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 36
SIC Name: MANU - ELECTRONIC & OTHER ELECTRIC EQUIP
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

Map ID	Site	Database(s)	EPA ID Number
39	**SP, SAC - SAND PILES** **401 I STREET** **SACRAMENTO, CA 95814**	**RESPONSE** **ENVIROSTOR** **HIST Cal-Sites**	**S100351371** **N/A**

RESPONSE:

Facility ID:	34320031
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Certified
Status Date:	1990-06-22 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5857369477911
Longitude:	-121.499380555556
Alias Name:	SOUTHERN PACIFIC TRANSPORTATION CO 34400004 SP, SAC - SAND PILES 34320031 100139
Alias Type:	Envirostor ID Number Project Code (Site Code) Envirostor ID Number Alternate Name Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1990-06-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1989-11-24 00:00:00
Confirmed:	30013
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Media Affected:	SOIL

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34320031
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: Not reported
Status: Certified
Status Date: 1990-06-22 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5857369477911
Longitude: -121.499380555556
Alias Name: SOUTHERN PACIFIC TRANSPORTATION CO
34400004
SP, SAC - SAND PILES
34320031
100139
Alias Type: Envirostor ID Number
Project Code (Site Code)
Envirostor ID Number
Alternate Name
Alternate Name
APN: NONE SPECIFIED
APN Description: Not reported
Comments: Remedial action completed. The material was segregated. The majority was recycled in the production of asphalt. Some material was disposed of at a Class I landfill. Concrete, wood, and metal debris were taken to a Class III landfill. 2,341 tons werCertified. DHS cleanup goal of 950 mg of lead/kg of soil was met.e recycled, 1,169 tons were removed.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1990-06-22 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Completed Document Type: Remedial Action Completion Report
Completed Date: 1989-11-24 00:00:00
Confirmed: 30013
Confirmed Description: Lead
Future Area Name: PROJECT WIDE
Future Sub Area Name: Not reported
Future Document Type: 5 Year Review Reports
Future Due Date: 2009
Media Affected: SOIL
Media Affected Desc: Soil
Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 30013
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, SAND BLASTING

HISTORICAL CAL-SITES:
Facility ID: 34320031
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06221990
Status: CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT
Status Name: CERTIFIED
Lead Agency: Not reported
Lead Agency: N/A
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Unknown
SIC Code: 32
SIC Name: MANU - STONE, CLAY & GLASS PRODUCTS
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SAND PILES (Continued) **S100351371**

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SP, SAC. - PONDS & DITCH** **CA BOND EXP. PLAN** **S100833178**
401 "I" STREET **N/A**
SACRAMENTO, CA 95814

CA BOND EXP. PLAN:

Reponsible Party:	RESPONSIBLE PARTY-LEAD SITE CLEANUP WORKPLAN
Project Revenue Source Company:	Southern Pacific Transportation Company/Denver and Rio Grande Railroad
Project Revenue Source Addr:	Southern Pacific Building, 1 Market Plaza
Project Revenue Source City,St,Zip:	San Francisco/Denver, CA/CO 94105
Project Revenue Source Desc:	DHS has budgeted $50,000 for oversight activities. The RP has agreed to pay DHS oversight costs in the enforceable agreement on a quarterly basis. The responsible parties will pay all costs associated with cleanup.
Site Description:	Industrial waste water disposal ponds and an industrial waste water conveyance ditch are the focal points of this site investigation. A RAP/RCRA closure is required.
Hazardous Waste Desc:	Sludge and soil samples analyzed contained high concentrations of copper, lead, zinc, 1,1,1-trichloroethane, trichloroethane, tetrachloroethene, naphthalene, and bis (2-ethylhexyl) phthalate. Ground water contaminants include chromium, methylene chloride, 1,1-dichloroethane (ethylene chloride), and trans-acetylene dichloride (trans-1,2-dichloroethane).
Threat To Public Health & Env:	Potential pathways of exposure include ingestion, inhalation and dermal contact. Potential receptors include humans, mammals, birds, insects, freshwater fish, nematodes, soil bacteria and grasses common to the Central Valley. The City of Sacramento has a domestic water intake from the Sacramento River located approximately one mile north of the site. Ground water is used by the State Printing Plant and Crystal Dairy for industrial purposes just north of the site. Wells serving Bannon Street residents have been tested for organics, metals and coliform organisms. Results showed all wells uncontaminated by organics and metals.
Site Activity Status:	Sludge from both the ponds and ditch was excavated and disposed of at a Class I landfill in 1984 and 1985 as IRMs. Three rounds of remedial investigation have been completed at the ponds and ditch, the most recent in May, 1987. Bench scale testing of soil solidification and soil washing is now underway. Until a final design is approved, the extraction well near the ponds and ditch has been turned off. A final feasibility study (FS) was received in October, 1988.

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39 **SP, SAC - SACRAMENTO STATION** **RESPONSE** **S101481755**
401 I STREET **DEED** **N/A**
SACRAMENTO, CA 95814 **ENVIROSTOR**
HIST Cal-Sites

RESPONSE:

Facility ID:	34400006
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified
Status Date:	1994-06-02 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5847502008032
Longitude:	-121.500730555556
Alias Name:	34400004
	CAD073772030
	P14013
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	SP, SAC - SACRAMENTO STATION
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	34400006
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

	laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1989-02-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Management Required: NONE SPECIFIED
Management Required Desc: Not reported
Potential: 10002, 10097, 10196, 30013
Potenital Description: * HALOGENATED ORGANIC COMPOUNDS
Potenital Description: * CONTAMINATED SOIL
Potenital Description: * UNSPECIFIED OIL CONTAINING WASTE
Potenital Description: Lead
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAILROAD RIGHT OF WAY

DEED:
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: Not reported
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: NONE SPECIFIED
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400006
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Certified
Status Date: 1994-06-02 00:00:00
Restricted Use: YES
Funding: Responsible Party
Latitude: 38.5847502008032
Longitude: -121.500730555556

Alias Name:	Alias Type:
34400004	Envirostor ID Number
CAD073772030	EPA Identification Number
P14013	PCode
SACRAMENTO RAILYARD FACILITY	
SOUTHERN PACIFIC TRANSPORTATION CO	
SP, SAC - SACRAMENTO STATION	
SP-SAC - OVERALL SITE	
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	
100139	
34400006	
SP-SAC - LOCOMOTIVE WORKS	

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: The deed restriction indicates that the property can be used without restriction for: 1) industrial uses and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of clean soil, iSOILEnforceable AgreementAGREEMENTFRA/DEED/CERT -- the site has been certified for soil remedial activities under the Remedial Action Plan. A Deed Restriction has been recorded which limits land use to commercial and industrial uses. Volume Recycled/Reused: 16,300COVERcubic yds Volume Disposed: 19,300 cubic yds Total Volume Treated/Stab/Disposed: 35,600 cubic yds # Acres of land returned/released: 37 acresf not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residental, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, gardens and landscaped areas. Soil must be managed as approved by the Department and instructure improvements must be developed consistent with the Deed restriction. In the industrial use areas, where exposure to soils is possible, such as landscaped area or easements, the owner shall maintain the 2-foot clean soil cover. If additional contamination is found during development, adequate measures must be taken to acheive permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, and the Department for monitoring, inspection, and other activities.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Deed Restriction / Land Use Covenant
Completed Date: 1994-05-19 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Certification
Completed Date: 1994-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1989-02-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedial Action Order
Completed Date: 1988-06-02 00:00:00
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedial Action Plan

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Completed Date:	1989-12-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1994-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1992-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-04-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1989-08-30 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAILROAD RIGHT OF WAY

HISTORICAL CAL-SITES:

Facility ID:	34400006
Region:	1
Region Name:	SACRAMENTO
Branch:	CC
Branch Name:	CENTRAL CALIFORNIA
File Name:	Not reported
State Senate District:	06021994
Status:	CERT - CERTIFIED AS HAVING BEEN REMEDIED SATISFACTORILY UNDER DTSC OVERSIGHT

Map ID	Site	Database(s)	EPA ID Number

SP, SAC - SACRAMENTO STATION (Continued) **S101481755**

Status Name: CERTIFIED
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **UP, DOWNTOWN SAC - CENTRAL SHOPS** **CHMIRS** **S105954432**
401 I STREET **RESPONSE** **N/A**
SACRAMENTO, CA 95814 **DEED**
ENVIROSTOR
HIST Cal-Sites

CHMIRS:
OES Incident Number: 03-3608
OES notification: 7/18/200302:53:32 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported
Time Notified: Not reported
Time Completed: Not reported
Surrounding Area: Not reported
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2003
Agency:	Union Pacific Railroad
Incident Date:	7/18/200312:00:00 AM
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Train Derailment
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	1
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported
OES Incident Number:	05-3945
OES notification:	7/1/200505:52:41 PM
OES Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Amtrak
Incident Date:	7/1/200512:00:00 AM
Admin Agency:	Sacramento City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Rail Road
E Date:	Not reported
Substance:	Diesel
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Gallons:	3
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Description:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Fuel vendor was changing nossels and when he disconnected it caused 3 gallons to spillAmtrak train stopped at Sacramento depot and freight train ran into back of it. No Spills of materials reported

AWP:

AWP Facility ID:	34400004
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	01011983
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	CV
RWQCB Associated With Site:	CENTRAL VALLEY
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	6
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400007
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
Current Status Date:	01011990
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Confirmed
# Of Contamination Sources:	1
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400009
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

AWP Facility ID:	34400010
Region Code:	1
Region:	SACRAMENTO
SMBR Branch Code:	CC
SMBR Branch Unit:	CENTRAL CALIFORNIA
Site Name.:	Not reported
Current Status Date:	06031992
Current Status:	ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency Code:	DTSC
Lead Agency:	DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type:	responsible party
Awp Site Type:	RESPONSIBLE PARTY
NPL:	Not Listed
Tier Of AWP Site:	Not reported
Source Of Funding:	C
Responsible Staff Member:	SGOSS
Supervisor Responsible:	Not reported
SIC Code:	40
Facility SIC:	RAILROAD TRANSPORTATION
RWQCB Code:	Not reported
RWQCB Associated With Site:	Not reported
Site Access Controlled:	Not reported
Site Listed HWS List:	Not reported
Hazard Ranking Score:	Not reported
Date Site Hazard Ranked:	Not reported
Groundwater Contamination:	Not reported
# Of Contamination Sources:	0
Lat/Long:	Not reported
Lat/Long (dms):	0 0 0 / 0 0 0
Lat/long Method:	Not reported
Description Of Entity:	Not reported
State Assembly Distt Code:	09
State Senate District:	06

RESPONSE:

Facility ID:	34400004
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	6
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Status:	Active
Status Date:	1983-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5874345180723
Longitude:	-121.500845
Alias Name:	CAD073772030
	34400010
	P11077
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400004
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - CENTRAL SHOP
Alias Type:	EPA Identification Number
	Envirostor ID Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC’s request for an indoor air evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required.

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1980-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1984-03-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-05-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	2005-07-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2005-12-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2002-10-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-08-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-03-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,30433,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,3050,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400005
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	Not reported
National Priorities List:	NO
Cleanup Oversight Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004 CAD073772030 P14029 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400005 SP-SAC - LOCOMOTIVE WORKS SP-SAC - OVERALL SITE SP-SAC - PONDS AND DITCH UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - PONDS AND DITCH
Alias Type:	Envirostor ID Number EPA Identification Number PCode Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane
Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400007
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	50

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
	Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,3026-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
	30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

Facility ID:	34400009
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION COMPANY
	SP, SAC - CAR SHOP NINE
	34400009
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP
Facility ID:	34400010
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	40
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS SP-SAC OVERALL SITE UNION PACIFIC RAILROAD-SACRAMENTO RAILYD 100139 SP, SAC - CENTRAL CORRIDOR
Alias Type:	EPA Identification Number Envirostor ID Number Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Alternate Name Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

DEED:

Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	STATE RESPONSE
Status:	ACTIVE
Deed Date(s):	07/11/01

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Area: PROJECT WIDE
Sub Area: Not reported
Site Type: STATE RESPONSE
Status: CERTIFIED / OPERATION & MAINTENANCE
Deed Date(s): 05/19/94

ENVIROSTOR:
Site Type: State Response
Site Type Detailed: State Response or NPL
Acres: 6
NPL: NO
Regulatory Agencies: SMBRP, RWQCB 5R - Central Valley
Lead Agency: SMBRP
Program Manager: PAUL CARPENTER
Supervisor: Fernando A. Amador
Division Branch: Central California
Facility ID: 34400004
Site Code: 100139
Assembly: 09
Senate: 06
Special Program: * RCRA 3012 - Past Haz Waste Disp Inven Site
Status: Active
Status Date: 1983-01-01 00:00:00
Restricted Use: NO
Funding: Responsible Party
Latitude: 38.5874345180723
Longitude: -121.500845

Alias Name:	Alias Type:
CAD073772030	EPA Identification Number
34400010	Envirostor ID Number
P11077	PCode
SACRAMENTO RAILYARD FACILITY	Alternate Name
SOUTHERN PACIFIC TRANSPORTATION CO	Alternate Name
34400004	Alternate Name
SP-SAC - LOCOMOTIVE WORKS	Alternate Name
SP-SAC - OVERALL SITE	Alternate Name
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD	Alternate Name
100139	Project Code (Site Code)
SP, SAC - CENTRAL SHOP	Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DTSC prepared a notice of determination (NOD) for Removal Action Workplan (RAW) for soil cleanup in six acres of the Central Shops Study Area of the Rail Yard. This plan would result in soil cleanup along a proposed new rail line corridor prior to mSite Screening is completed.Final.RP submitted inserts to the Draft HRA Report to update the conclusions to address DTSC's request for an indoor air

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

evaluation. Conclusions were updated to indicate although no unacceptable risks are associated with the Central Shops and South PlumeDTSC approved the "Completion of Soil Remediation in 4.25 acre Main Freight Line Relocation within the Central Shops Area" on July 1, 2005. The RWQCB provided concurrence on July 8, 2005.Offsite Groundwater RA CompletedDTSC approved RAW for soil cleanup of six acres of the Central Shops Study area along a new rail line corridor prior to moving the frieght track. The RAW proposes excavation of soil impacted with SVOCs, VOCs and metals and implementation will be conPreliminary Assessment: Central Valley RWQCB (12/17/81) - operations are locomotive maintenance, engine building/ rebuilding, forging, metal painting, battery machining, wheel brake, & fabrication. In operation since 1863. 100-year flood plain.Asbestos Contingency PlanNotice of DeterminationCalifornia Environmental Quality Act (CEQA) Ground Water Removal Action (GWRA) -- The DTSC has approved the final California CEQA package for vertical and horizontal containment of an off-site groundwater plume emanating from the SPTCo-Sacramento RaEnforceable Agreement dated June 2, 1988ground water under current conditions and land use, potential unacceptable risks may be associated with future land use, thus further evaluation with repect to soil and groundwater is required. This additional evaluation will be included in the Feassistent with RDIP approved for soil remediation activities.il Yard off-site to the south, the South Plume. The CEQA package project is implementation of two Interim Remedial Measures (IRMs), the South Plume Source Control and the South Plume Margin Control. The South Plume Margin Control consists of a groving the freight track. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comment were received by DTSC and addressed through a responsiveness summary.ibility Study as part of the development of remedial goals for soil and groundwater. The future evaluation of VOCs will include all applicable exposure pathways including indoor air.oundwater extraction system located on P Street in Sacramento for leading edge capture. The South Plume Source Control consists of a groundwater/soil vapor extraction and treatment system located within the SPTCo-Sacramento Rail Yard to capture identified sources. Removal Action Work Plan (RAW) Groundwater Removal Action (GWRA) -- A Removal Action Workplan was approved for two South Plume Margin Control. The South Plume Margin Control consists of a groundwater extraction system located onP Street in Sacramento. The South Plume Source Control is comprised of a groundwater/soil vapor extraction and treatment system located within the Central Shops Study area of the SPTCo-Sacramento Rail Yard. The Interim Remedial Measures (IRMs) arebeing implemented to control the lateral and veritcal migration of groundwater contaminated with volatile organic compounds. The groundwater extraction system became operational on May 12, 2001.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Discovery
Completed Date:	1980-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	2003-02-21 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1987-02-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Assessment Report
Completed Date:	1984-03-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-05-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	2005-07-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Human Health Risk Assessment Report
Completed Date:	2005-12-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	2002-10-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1995-08-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Workplan
Completed Date:	1995-04-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1993-03-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspection Report
Completed Date:	1986-08-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fact Sheets
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-02-01 00:00:00
Confirmed:	20011,10179,10193,10195,10196,10198,30003,10060,10098,10119,10124,4000 ,30472,30473,30474,30475,30476,30477,30478,30479,30480,30481,30482,304 3,30484,30485,30019,30022,30024,30025,30026,30027,30028,30032,30272,30 50,3002502,30593
Confirmed Description:	* OTHER INORGANIC SOLID WASTE
Confirmed Description:	* Sludge - Paint
Confirmed Description:	* UNSPECIFIED ACID SOLUTION
Confirmed Description:	* UNSPECIFIED AQUEOUS SOLUTION
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* UNSPECIFIED SOLVENT MIXTURES
Confirmed Description:	Benzene
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* DETERGENT & SOAP
Confirmed Description:	* ACID SOLUTION 2>PH WITH METALS
Confirmed Description:	* ALKALINE SOLUTION WITHOUT METALS
Confirmed Description:	Not reported
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Tetrachloroethylene (PCE)
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Trichloroethylene (TCE)
Confirmed Description:	Vinyl chloride
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2033
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, OTH, SOIL, SV, IA
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Other Groundwater affected (uses other than drinking water)
Media Affected Desc:	Soil
Media Affected Desc:	Not reported
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10060, 10098, 10119, 10124, 40001, 10179, 10193, 10195, 10196, 10198, 20011, 30003, 30019, 30022, 30024, 30025, 3002502, 30026, 30027, 30028, 30032, 30272, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* DETERGENT & SOAP
Potenital Description:	* ACID SOLUTION 2>PH WITH METALS
Potenital Description:	* ALKALINE SOLUTION WITHOUT METALS
Potenital Description:	Not reported
Potenital Description:	* Sludge - Paint
Potenital Description:	* UNSPECIFIED ACID SOLUTION
Potenital Description:	* UNSPECIFIED AQUEOUS SOLUTION
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* UNSPECIFIED SOLVENT MIXTURES
Potenital Description:	* OTHER INORGANIC SOLID WASTE
Potenital Description:	Benzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Not reported
	485, 30550, 30593
Potenital Description:	Not reported
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	HWMP, SMBRP, RWQCB 5R - Central Valley
Lead Agency:	NONE SPECIFIED
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400005
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Certified / Operation & Maintenance
Status Date:	1996-01-12 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5916156626505
Longitude:	-121.496075
Alias Name:	34400004
	CAD073772030
	P14029
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400005
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	SP-SAC - PONDS AND DITCH

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - PONDS AND DITCH

Alias Type: Envirostor ID Number
EPA Identification Number
PCode
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number

APN: NONE SPECIFIED
APN Description: Not reported
Comments: Wastewater disposal pond/ditch. Contaminants include Pb, toluene, TCE, PCE, 1,1-DCA, xylene, benzene, 1,1,1-TCA, and PAH. Groundwater contaminated with Ni, TCE, Cr, 1,2-DCE, and methylene chloride.RAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopThe deed restriction indicates that the property can be used without restriction for: 1) industrial and commercial and 2) the landscaped and paved areas ancillary to the industrial, commercial or office structures that are covered with 2 feet of cleOIL POND REMOVALORDER -- the Department, after extensive efforts to negotiate an agreement with SPTCo, issued an Order to SPTCo for Operation and Maintenance of a groundwater extraction system at the Pond and Ditch site.FRA (GW1) -- A 5-well ground water extraction system was started up at the site. The system initially withdrew 250 gpm of water impacted by chlorinated solvents. The system evaluation conducted since the start-up has shown that augmentation will bRMDL (GW2) -- The Ponds and Ditch Study Area (PDSA) groundwater extraction system has been modified and implemented to meet the requirements of the Remedial Action Plan and Closure Plan (RAP) for the Southern Pacific Transportation Company-SacrameRI/FS -- FOURTEEN GROUND WATER SAMPLES WERE COLLECTED DOWN GRADIENT, AT THE ESTIMATED MARGIN OF THE UPPER SAND ZONE GROUNDWATER PLUME. RESULTS FROM THE SAMPLING INDICATE THAT THE PLUME MARGIN IS WITHIN THE ESTIMATED MARGIN, COMPLETING CHARACTERIZATRemoval Action: Pond - soil/sludge removal.FRA (SOIL) -- This final remedial action consisted of back- filling and compaction of an excavation with 11,000 cubic yards of imported clean fill and was completed May 30, 1993. In order to meet the RCRA Closure requirements for this unit, prior toAPPROXIMATELY 1880 CUBIC YARDS OF SOIL WAS EXCAVATED AND DISPOSEDThe Department issued a conditional approval for modification of the abandonment procedures for water supply well WSW-5 and abandonment of selcted monitoring and extraction wells and shutdown of the Drum Storage Area and Ponds and Ditch Study Area RDESIGN -- the Department approved SPTCo's Modified Pond & Ditch Extraction system: Final Design Report. The Final

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Design Report provides detailed plumbing and electrical plans and provides discharge requirements from the City of Sacramento and tres RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03.e required with at least two additional extraction wells and predischarge treatment to reduce contaminant concentrations to levels acceptable for discharge to the city of Sacramento sewer system for treatment at the publicly owned treatment works.backfilling an area of excavation, a post-remediation health risk assessment was required. The recently approved assessment has shown the site will not pose unacceptable risks, therefore allowing backfill of the excavation. Approx cost = $110,000ION AND ALLOWING TREATMENT BY THE EXISTING, MODIFIED GROUND WATER EXTRACTION SYSTEM. APPROX. COST OF THIS SAMPLING WAS $50,000 WHICH WAS PAID FOR BY THE RP.atment requirements from the County of Sacramento.nto, Rail Yard PDSA. The original five well extraction system selected as the remedial alternative was modified to be a seven well extraction and treatment system after total Volatile Organic Compound (VOC) discharge levels exceeded the 100 parts pes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughCRA Unit groundwater treatment systems. The Drum Storage Area and Ponds and Ditch Study Area RCRA Units are to be incorporated into the CERCLA Study areas (Northern Shops Study Area for Former Drum Storage Area and Lagoon Study Area of Ponds and Ditan soil, if not used for play areas. Restricted uses include 1) excavation for any purpose other than remediation 2) residential, 3) public or institutional uses 4) educational 5) day care 6) parks, playgrounds water features, open space, yards, garch), although will maintain its unique RCRA identity as subsections in future CERCLA monitoring, letters and reports.Approx. 110,000,000 gallons pumped & treated this FY. Approx. cost = $250,000 (RP funded)March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.dens and landscaped areas. Soil must be managed as approved by the Department and infrastructure improvements must be developed consistent with the Deed restriction. In the industrial or commercial use areas, where exposure to soils is possible, sucer billion (ppb) total VOC level required for extraction and discharge into the Sacramento City sewer system. An original groundwater extraction well, exw-4, was identified as the primary source of VOC's. To address this, SPTCo installed two additPublic comments were received by DTSC and addressed through a responsiveness summary.(RP funded)ional groundwater extraction wells, exw-6 and exw-7, and connected exw-4, exw-6 and exw-7 to the existing Drum Storage Area soil vapor/groundwater extraction system for treatment prior to discharge. The original PDSA groundwater extraction system wh as landscaped area or easements, the owner shall continually keep and maintain clean soil to such depth as the owner or occupant has demonstrated to the reasonable satisfaction of the Department to be protective of human health and the environmentas in operation on November 5, 1992. The complete, modified groundwater extraction system has been in operation since Aug. 15, 1994.. If additional contamination is found during development, adequate measures must be taken to achieve

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

	permanent remediation and prevent unacceptable exposure to humans or the environment. The soil disposal shall be managed in accordance with all applicable state and federal laws. No water from below the surface shall be extracted or utilized in any way or consumed, although access will be allowed for groundwater monitoring and extraction systems for Union Pacific, it successors or agents, andthe Department for monitoring, inspection, and other activities.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Certification
Completed Date:	1996-01-12 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	1994-05-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1984-04-19 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	2000-03-10 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1989-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-27 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1991-06-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1987-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	Removal Action Completion Report
Completed Date:	1985-07-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1995-04-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Operations and Maintenance Plan
Completed Date:	1994-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1994-06-23 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Report
Completed Date:	1994-01-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Completion Report
Completed Date:	1993-05-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1992-10-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	1990-03-30 00:00:00
Confirmed:	10196-NO,10199-NO,30001-NO,30003-NO,10002-NO,30013-NO,10060-NO,10097-N ,30472-NO,30535-NO,30536-NO,30563-NO,30564-NO,30022-NO,30024-NO,30025- O,30027-NO,30032-NO,30180-NO,30181-NO,30192-NO,30193-NO,30194-NO,30195 NO,30196-NO,30198-NO,30199-NO,30200-
Confirmed Description:	Not reported
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Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	NO,30201-NO,30202-NO,30203-NO,30271-NO,30550-NO,3002502-NO,30593-NO
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10097, 10196, 10199, 30001, 30003, 30013, 30022, 30024, 30025, 3002502, 30027, 30032, 30180, 30181, 30192, 30193, 30194, 30195, 30196, 30198, 30199, 30200, 30201, 30202, 30203, 30271, 30472, 30535, 30536, 30550, 30563, 30564, 30593
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Acetone
Potenital Description:	Dibromochloromethane
Potenital Description:	1,2-Dibromo-3-chloropropane (DBCP)
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,2-Dichloroethane (EDC)
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)
Potenital Description:	2,4-Dichlorophenoxyacetic Acid (2,4-D)
Potenital Description:	1,2-Dichloropropane
Potenital Description:	1,3-Dichloropropane
Potenital Description:	1,3-Dichloropropene
Potenital Description:	2,3-Dichloropropanol
Potenital Description:	Ethyl acrylate
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	1,1,1,2-Tetrachloroethane

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	1,1,2,2-Tetrachloroethane
Potenital Description:	Toluene
Potenital Description:	1,2,4-Trichlorobenzene
Potenital Description:	1,1,2-Trichloroethane
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	50
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400007
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	* RCRA 3012 - Past Haz Waste Disp Inven Site
Status:	Active
Status Date:	1990-01-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.592
Longitude:	-121.5027
Alias Name:	34400004
	CAD073772030
	P14032
	UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION CO
	34400007
	SP, SAC - NORTHERN SHOPS/DRUM STORAGE
	SP-SAC - DRUM STORAGE AREA
	SP-SAC - LOCOMOTIVE WORKS
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP, SAC - NORTHERN SHOPS
Alias Type:	Envirostor ID Number
	EPA Identification Number
	PCode
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Alternate Name
Alternate Name
Alternate Name
Project Code (Site Code)
Envirostor ID Number
Alternate Name

APN: NONE SPECIFIED
APN Description: Not reported
Comments: DES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Northern Shops Study Area.RI/FS -- THE NORTHERN SHOPS STUDY AREA (NSSA) REPRESENTS APPROXIMATELY 35 ACRES OF THE 240-ACRE SPTCO-SACRAMENTO RAILYARD. THE APPROVED RIFS HAS INITIALLY IDENTIFIED 180,000 CUBIC YARDS OF CONTAMINATED SOILS THAT WILL REQUIRE OFFSITE DISPOSAL.DESIGN (DSVSI) and DESIGN (DSGWI)--The designs approved extraction and treatment of VOCs and TPH in soil and groundwater at the former drum storage area facility.CEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopFRA (DSVS1) and FRA (DSGW) -- The groundwater extraction and treatment and soil vapor extraction and treatment systems have been constructed at the former drum storage area facility. Normal operation of the systems began 09/15/1994.RAP - The DTSC approved the Final RAP, dated February 14, 2000, for the Northern Shops Study Area, which consists of 35 acres of the 240 acre SPTCo-Sacramento Rail Yard Site. The approved alternative for remediation for the 180,650 cubic yards of cAsbestos Contingiency PlanDrum Storage Area Groundwater Treatment System Construction completedRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishORDER (DOS&M) -- An Enforceable Agreement was completed for the Operation and Maintenance of the groundwater and vapor extraction systems at the former drum storage area facility.Notice of Determinationes the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified the RAP is excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the selected alternative is schedule to begin in May of 2000 and to continue through October of 2005. The preliminarys RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cost of the proposed alternative is estimated to be $14,353,374. CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.03. Public comments were received by DTSC and addressed through a responsiveness summary.
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1996-07-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	* Remedial Action Order
Completed Date:	1987-07-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	1992-06-30 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Implementation Workplan
Completed Date:	2003-02-01 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-12-31 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1992-01-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Participation Plan / Community Relations Plan
Completed Date:	1989-02-28 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial: Operating Properly & Successfully
Completed Date:	1994-09-15 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Design
Completed Date:	1994-03-09 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Removal Action Completion Report
Completed Date:	1990-06-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Public Notice
Completed Date:	2003-07-18 00:00:00
Confirmed:	20010,10196,10199,30003,10002,30013,10060,10061,10097-NO,30472-NO,3047 -NO,30474-NO,30475-NO,30476-NO,30477-NO,30478-NO,30479-NO,30480-NO,304 1-NO,30482-NO,30483-NO,30484-NO,30485-NO,30019-NO,30022-NO,30024-NO,30 26-NO,30027-NO,30028-NO,30032-NO,301
Confirmed Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Confirmed Description:	* UNSPECIFIED OIL CONTAINING WASTE
Confirmed Description:	* WASTE OIL & MIXED OIL
Confirmed Description:	Benzene
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Confirmed Description:	* OIL/WATER SEPARATION SLUDGE
Confirmed Description:	* ORGANIC LIQUIDS WITH METALS
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
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Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed:	92-NO,30194-NO,30195-NO,30196-NO,30550-NO,3002501-NO,3002502-NO,30593-O
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	5 Year Review Reports
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2010
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10060, 10061, 10097, 10196, 10199, 20010, 30003, 30013, 30019, 30022, 30024, 3002501, 3002502, 30026, 30027, 30028, 30032, 30192, 30194, 30195, 30196, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484,
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* OIL/WATER SEPARATION SLUDGE
Potenital Description:	* ORGANIC LIQUIDS WITH METALS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	* WASTE OIL & MIXED OIL
Potenital Description:	* ORGANIC LIQUIDS (NONSOLVENTS) WITH HALOGENS
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Tetrachloroethylene (PCE)
Potenital Description:	TPH-diesel
Potenital Description:	TPH-JET FUEL
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Trichloroethylene (TCE)
Potenital Description:	Vinyl chloride
Potenital Description:	Acetone
Potenital Description:	1,1-Dichloroethane
Potenital Description:	1,1-Dichloroethylene
Potenital Description:	1,2-Dichloroethylene (cis)
Potenital Description:	1,2-Dichloroethylene (trans)
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
	30485, 30550, 30593
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
	RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP
	RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400009
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	YES
Funding:	Responsible Party
Latitude:	38.5909361445783
Longitude:	-121.494225
Alias Name:	34400004
	SACRAMENTO RAILYARD FACILITY
	SOUTHERN PACIFIC TRANSPORTATION COMPANY
	SP, SAC - CAR SHOP NINE
	34400009
	SP-SAC - OVERALL SITE
	UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
	100139
	SP-SAC - LOCOMOTIVE WORKS
Alias Type:	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Alternate Name
Project Code (Site Code)
Envirostor ID Number
APN: NONE SPECIFIED
APN Description: Not reported
Comments: CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended (FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP).RI/FS -- The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard Car Shop Nine Study Area (CSNSA). Groundwater contamination for the CSNSA will be addressed wDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSNSA) IS APPROXIMATELY 44 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSNSA WAS UTILIZED FOR CONSTRUCTING AND PAINTING RAILCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopDES - The DTSC approved the Final Remediation Design and Imple- mentation Report (RDIP) on May 22, 2000, for the Car Shop Nine Study Area, 40 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP is for the 132,718 cubic yardsRAP - The DTSC approved the Final RAP, for the Car Shop Nine Study Area, which consists of 40 acres of the 240 acre SPTCo- Sacramento Rail Yard site. The approved alternative for approved alternative for remediation for the 132,718 cubic yards of coRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishThe 7th Street Corridor deed restriction prohibits land uses including residental, hospital, public or private schools for persons uncer 18 years of age, day care centers, raising of food, drilling for water, and extraction of groundwater. No activities are allowed that will disturb the soil without a soils management plan and health and safety plan and contaminated soils brought to the surface shall be managed in accordance with all applicable state and federal laws. The deed restriction as RAP for Soil. A comment period for the project was held from February 25 through March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary. The ACP establof contaminated soils consists of excavation, land farming, chemical stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costs of the propoithin the Lagoon Groundwater and Central Shops South Plume RI/FS and RAP. The CSNSA was utilized for constructing rail cars, painting rail cars, sandblasting, general offices and railyard operations buildings. Additionally, five Underground StorageCARS; SANDBLASTING; GENERAL OFFICES; AND RAIL YARD OPERATIONS. THE RDIP 2004 PROVIDES FOR EXCAVATIONS, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED VOLATILE ORGANIC COMPOUNDS (VOCs), SVOC, AND Tntaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of selected alternative is scheduled to being in May of 2000 and to continue through October of 2005. The preliminary ces the process to identify the presence of

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

and safety clean up of asbestos if found during future soil excavation.ost of the proposed alternative is estimated to be $8,050,957. CEQA/NOD -sed alternative is estimated to be 8,050,957.Tanks were located at the CSNSA. During Phase I characterization, soil gas samples were collected from 11 locations, 31 soil borings were drilled and sampled, andgroundwater samples were collected from 24 locations. During Phase II, the final PhaseOTAL PETROLEUM HYDROCARBON (TPH) IN THE CAR SHOP NINE STUDY AREA, LAGOON STUDY AREA, AND CENTRAL CORRIDOR STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.lso allows access for the Department for monitoring, inspection, and other activities.ishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/03. Public comments were recei25 additional soil borings were drilled. Compounds of concern (COC'S) detected in the soil included VOC'S-VC and TCE, SVOC'S-PNA'S, Anthracene and Chrysene, TPH-#2 and #6 fuel oil, oil and grease and extractable and metals-arsenic, Lead, Cadmium, anved by DTSC and addressed through a responsiveness summary.d beryllium. The lateral and vertical extent of COC'S detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Deed Restriction / Land Use Covenant
Completed Date:	2001-07-11 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Initial Study/ Environmental Impact Report
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-07 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Future Sub Area Name:	Not reported
Future Document Type:	Operations and Maintenance Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 10097, 10196, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	* CONTAMINATED SOIL
Potenital Description:	* UNSPECIFIED OIL CONTAINING WASTE
Potenital Description:	Lead
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP RAIL ROAD MAINTENANCE SHOP

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	40
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	34400010
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	1992-06-03 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5892277108433
Longitude:	-121.5025
Alias Name:	CAD073772030 34400004 SACRAMENTO RAILYARD FACILITY SOUTHERN PACIFIC TRANSPORTATION CO 34400010 SP-SAC LOCOMOTIVE WORKS

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

SP-SAC OVERALL SITE
UNION PACIFIC RAILROAD-SACRAMENTO RAILYD
100139
SP, SAC - CENTRAL CORRIDOR

Alias Type:	EPA Identification Number
	Envirostor ID Number
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Alternate Name
	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	CEQA/NOD - The DTSC approved the Notice of Determination for the LSA Final Amended RAP(FARAP), and the NSSA, CSNSA, and CCSA Final Remedial Action Plan (FRAP) on February 16, 2000.RAP - ESD -- The Department has approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. Soil remediation strategies approved under the site Remedial Action Plans (RAP) includes excavationCEQA - NOD -- The Department approved an Explanation of Significant Differences (ESD) on 4/17/02 to permit soil bioremediation treatment on-site. To meet the requirements of the California Environmental Quality Act, DTSC, in its role as the Lead AgeDES - The DTSC approved the Final Remediation Design and Implementation Report (RDIP) on May 22, 2000, for the Central Corridor Study Area, 29 acres of the 240 acre SPTCo - Sacramento Rail Yard Site. The approved RDIP for remediation for the 98,888RAP - The DTSC approved the Final RAP for the Central Corridor Study Area which consists of 29 acts of the 240 acre Southern Pacific Transportation-Sacramento Rail Yard Site. The approved alternative for remediation for the 98,888 cubic yards of cRAP/ACP--DTSC approved an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine and Northern Shops RAP for Soil. The ACP establishCEQA/NOE--DTSC prepared a Notice of Exemption (NOE) for an Asbestos Contingency Plan (ACP) prepared to amend the February 2000 Final Amended Industrial Wastewater Lagoon RAP, and February 2000 Final Central Corridor, Car Shop Nine, and Northern ShopRI/FS - The Union Pacific Railroad Company has completed soil characterization of the former Southern Pacific Transportation Company - Sacramento Railyard, Central Corridor Study Area (CCSA). Groundwater contamination for the CCSA will be addressedDES/RDIP -- DESIGN/REMEDIAL DESIGN IMPLEMENTATION PLAN. THE CAR SHOP NINE STUDY AREA (CSSA) IS APPROXIMATELY 35 ACRES OF THE 240 ACRE FORMER SPTCO RAIL YARD LOCATED IN DOWNTOWN SACRAMENTO. THE CSSA WAS UTILIZED FOR BOXCAR CLEANING DISMANTLING AND Sncy for the soil remediation of the site, has considered the Environmental Impact Reports prepared for and certified by the City of Sacramento (City). DTSC has determined that the EIRs and supporting documents relied on for approval of the site soils RAP for Soil. The ACP establishes the process to identify the presence of and safely clean up asbestos if found during future soil excavation. A comment period for the project was held from 2/25/03 to 3/27/03. A public meeting was held on 3/11/cubic yards of contaminated soils consists of excavation, land farming, chemical

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

stabilization and, off-site disposal. Implementation of the RDIP is scheduled to begin in May of 2000, and to continue through October of 2005. The preliminary costsANDBLASTING. A SAWMILL WAS UTILIZED FOR LUMBER MILLING, PLAINING, AND WOODWORKING. THE RDIP 2004 PROVIDES FOR EXCAVATION, STORAGE, TREATMENT, AND OFFSITE DISPOSAL OF APPROXIMATELY 120,000 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE ORGANIC COMPwithin the Lagoon groundwater and Central Shops/South Plume Remedial Investigation/Feasibility Study (RI/FS) and Remedial Action Plan (RAP). The CCSA was utilized for boxcar cleaning and dismantiling, sandblasting, general offices, and a sawmill. Aof impacted soil, treating certain soil prior to reuse or disposal, and loading all waste soil for off-site disposal to a landfill.
Treatment options approved under the RAP did not specifically include bioremediation of soil. The enclosed ESD hases the process to identify the presence of and safety clean up of asbestos if found during future soil excavation. In compliance with CEQA, DTSC has prepared a notice of exemption. A comment period for the project was held from February 25 throughontaminated soils identified in the RAP is excavation, land farming, chemical stabilization and off-site disposal. Implementation of the selected alternative is scheduled to begin in May of 2000 and to continue through October of 2005. The prelimin03. Public comments were received by DTSC and addressed through a responsiveness summary.ary cost of proposed alternative is estimated to be $5,998,757.March 27, 2003. A public meeting was held on March 11, 2003. Public comments were received by DTSC and addressed through a responsiveness summary.OUNDS (VOCs), SVOC, AND TOTAL PETROLEUM HYDROCARBON (TPH) IN THE CENTRAL CORRIDOR STUDY AREA, CAR SHOP NINE STUDY AREA, AND LAGOON STUDY AREA FOR WHICH REMEDIAL ACTION PLANS (RAPs) HAVE BEEN PREVIOUSLY APPROVED.of the proposed alternative is estimated to be 5,998,757.been prepared to amend the site RAP administrative record to include bioremediation treatment of stockpiled soil containing petroleum hydrocarbon. The proposed change is protective of human health and the environment, complies with appropriate, appdditionally, four underground storage tanks (USTs) were located at the CCSA. During Phase 1 Characterization, soil gas samples were collected from 69 locations, 22 soil borings were drilled and sampled, and groundwater samples were collected from 1Remedial Action Plans have adequately adddressed the potential impacts of the project proposed under the ESD. DTSC, using its independent judgement has determined that the project, in its approved form, will not result in a significant adverse effect on the environment. A Notice of Determination indicating the results of said findings has been filed with the State Clearninghouse of the Governor's Office of Planning and Research pursuant to Section 15096(i) of the State CEQA Guidelines.2 locations. During Phase II, the final phase, 19 additional soil borings were drilled. Compunds of concern (COC's) detected in the soil included volatile organic compounds (VOCs) - vinyl chloride (VC) and Trichloroethylene (TCE), Semi-volatile orlicable or relevant federal and state requirements and remains cost-effective.ganic compounds (SVOCs)- Polynuclear Aromatics (PNAs), anthracene and chrysene, Total petroleum hydrocarbons TPH-#2 and #6 fuel oil, oi and grease and extractable, and metal-arsenic, lead, cadmium, and beryllium. The lateral and vertical extent ofCOCs detected in the soil has been sufficiently defined for purposes of developing the soil, final remedial action objectives.

Completed Area Name: PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Notice of Exemption
Completed Date:	2003-02-20 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	CEQA - Responsible Agency Review
Completed Date:	2000-02-16 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2003-05-08 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Action Plan
Completed Date:	2002-04-17 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation / Feasibility Study
Completed Date:	1998-10-05 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2004-07-29 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Design
Completed Date:	2000-05-22 00:00:00
Confirmed:	10002,30013
Confirmed Description:	* HALOGENATED ORGANIC COMPOUNDS
Confirmed Description:	Lead
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Long Term Monitoring Report
Future Due Date:	2032
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Completion Report
Future Due Date:	2009
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2011
Media Affected:	SOIL
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	10002, 30013
Potenital Description:	* HALOGENATED ORGANIC COMPOUNDS
Potenital Description:	Lead

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported
PastUse: RAIL ROAD MAINTENANCE SHOP, RAILROAD RIGHT OF WAY
RAIL ROAD MAINTENANCE SHOP, WASTE WATER PONDS
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP
RAIL ROAD MAINTENANCE SHOP

HISTORICAL CAL-SITES:
Facility ID: 34400004
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01011983
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: CV
Region Water Control Board Name: CENTRAL VALLEY
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400005
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 01121996
Status: COM - CERTIFIED OPERATION AND MAINTENANCE, ALL PLANNED ACTIVITIES IMPLEMENTED REMEDIATION CONTINUES
Status Name: CERTIFIED / OPERATION & MAINTENANCE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400007
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: UP, DOWNTOWN SAC - NORTHERN SHOPS/DRUM S
State Senate District: 01011990
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Confirmed
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400009
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09
State Senate District Code: 06

Facility ID: 34400010
Region: 1
Region Name: SACRAMENTO
Branch: CC
Branch Name: CENTRAL CALIFORNIA
File Name: Not reported
State Senate District: 06031992
Status: AWP - ANNUAL WORKPLAN (AWP) - ACTIVE SITE
Status Name: ANNUAL WORKPLAN - ACTIVE SITE
Lead Agency: DTSC
Lead Agency: DEPT OF TOXIC SUBSTANCES CONTROL
Facility Type: RP
Type Name: RESPONSIBLE PARTY
NPL: Not Listed
SIC Code: 40
SIC Name: RAILROAD TRANSPORTATION
Access: Not reported
Cortese: Not reported
Hazardous Ranking Score: Not reported
Date Site Hazard Ranked: Not reported
Groundwater Contamination: Not reported
Staff Member Responsible for Site: SGOSS
Supervisor Responsible for Site: Not reported
Region Water Control Board: Not reported
Region Water Control Board Name: Not reported
Lat/Long Direction: Not reported
Lat/Long (dms): 0 0 0 / 0 0 0
Lat/long Method: Not reported
Lat/Long Description: Not reported
State Assembly District Code: 09

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - CENTRAL SHOPS (Continued) **S105954432**

State Senate District Code: 06

Click this hyperlink while viewing on your computer to access additional CA_CALSITE: detail in the EDR Site Report.

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39 **SUSD** **Sacramento Co. CS** **S104795583**
425 I ST **N/A**
SACRAMENTO, CA

Sacramento Co. CS:

Region:	SACRAMENTO
State Site Number:	R094
Lead Staff:	NONE ASSIGNED, H.
Lead Agency:	L
Remedial Action Taken:	0
Substance:	Not reported
Date Reported:	Not reported
Facility Id:	RO0000636
Case Type:	FAUX
Case Closed:	Y
Date Closed:	**Not reported**

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39 **UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **RESPONSE** **S107737490**
400 I STREET **ENVIROSTOR** **N/A**
SACRAMENTO, CA 95814

RESPONSE:

Facility ID:	70000034
Site Type:	State Response
Site Type Detail:	State Response or NPL
Acres:	240
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Lead Agency Description:	Not reported
Project Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Site Code:	100139
Assembly:	09
Senate:	06
Special Program Status:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00
Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034 100139
Alias Type:	Project Code (Site Code) Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

ENVIROSTOR:

Site Type:	State Response
Site Type Detailed:	State Response or NPL
Acres:	240
NPL:	NO
Regulatory Agencies:	SMBRP, RWQCB 5R - Central Valley
Lead Agency:	SMBRP
Program Manager:	PAUL CARPENTER
Supervisor:	Fernando A. Amador
Division Branch:	Central California
Facility ID:	70000034
Site Code:	100139
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Active
Status Date:	2004-10-01 00:00:00

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Restricted Use:	NO
Funding:	Responsible Party
Latitude:	38.5833
Longitude:	-121.5008
Alias Name:	70000034
	100139
Alias Type:	Project Code (Site Code)
	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	UP submitted Draft RI Workplan
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Consent Order
Completed Date:	1988-06-02 00:00:00
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Remedial Investigation Workplan
Completed Date:	2005-12-09 00:00:00
Confirmed:	30001,30003,30013,30472,30473,30474,30475,30476,30477,30478,30479,3048 ,30481,30482,30483,30484,30485,30024,30025,30026,30032,30272,30425,305 0,3002502,30593
Confirmed Description:	Arsenic
Confirmed Description:	Benzene
Confirmed Description:	Lead
Confirmed Description:	Polynuclear aromatic hydrocarbons (PAHs)
Confirmed Description:	Acenaphthene
Confirmed Description:	Anthracene
Confirmed Description:	Benz[a]anthracene
Confirmed Description:	Benzo[b]fluoranthene
Confirmed Description:	Benzo[k]fluoranthene
Confirmed Description:	Benzo[a]pyrene
Confirmed Description:	Chrysene
Confirmed Description:	Dibenz[ah]anthracene
Confirmed Description:	Fluoranthene
Confirmed Description:	Fluorene
Confirmed Description:	Indeno[1,2,3-cd]pyrene
Confirmed Description:	Naphthalene
Confirmed Description:	Pyrene
Confirmed Description:	TPH-diesel
Confirmed Description:	TPH-gas
Confirmed Description:	1,1,1-Trichloroethane (TCA)
Confirmed Description:	Acetone
Confirmed Description:	Ethylbenzene
Confirmed Description:	N-Nitroso di-n-propylamine
Confirmed Description:	Toluene
Confirmed Description:	TPH-MOTOR OIL
Confirmed Description:	Xylenes
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Design
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Feasibility Study Report
Future Due Date:	2008
Future Area Name:	PROJECT WIDE

Map ID	Site	Database(s)	EPA ID Number

UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT (Continued) **S107737490**

Future Sub Area Name:	Not reported
Future Document Type:	Remedial Action Plan
Future Due Date:	2008
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Remedial Investigation Report
Future Due Date:	2007
Future Area Name:	PROJECT WIDE
Future Sub Area Name:	Not reported
Future Document Type:	Certification
Future Due Date:	2009
Media Affected:	AQUI, SOIL
Media Affected Desc:	Aquifer used for drinking water supply affected
Media Affected Desc:	Soil
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	30001, 30003, 30013, 30024, 30025, 3002502, 30026, 30032, 30272, 30425, 30472, 30473, 30474, 30475, 30476, 30477, 30478, 30479, 30480, 30481, 30482, 30483, 30484, 30485, 30550, 30593
Potenital Description:	Arsenic
Potenital Description:	Benzene
Potenital Description:	Lead
Potenital Description:	TPH-diesel
Potenital Description:	TPH-gas
Potenital Description:	TPH-MOTOR OIL
Potenital Description:	1,1,1-Trichloroethane (TCA)
Potenital Description:	Acetone
Potenital Description:	Ethylbenzene
Potenital Description:	N-Nitroso di-n-propylamine
Potenital Description:	Polynuclear aromatic hydrocarbons (PAHs)
Potenital Description:	Acenaphthene
Potenital Description:	Anthracene
Potenital Description:	Benz[a]anthracene
Potenital Description:	Benzo[b]fluoranthene
Potenital Description:	Benzo[k]fluoranthene
Potenital Description:	Benzo[a]pyrene
Potenital Description:	Chrysene
Potenital Description:	Dibenz[ah]anthracene
Potenital Description:	Fluoranthene
Potenital Description:	Fluorene
Potenital Description:	Indeno[1,2,3-cd]pyrene
Potenital Description:	Naphthalene
Potenital Description:	Pyrene
Potenital Description:	Toluene
Potenital Description:	Xylenes
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	MANUFACTURED GAS PLANT

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNTOWN SAC - MANUFACTURED GAS PLANT** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1008984943** **N/A**

Manufactured Gas Plants:

A new area was added in 2003, entitled the Manufactured Gas Plant (MGP) Area, which was established after discovering remnants of an MGP on the western boundary of the northern shops area during soil remediation activities in the Northern Shops area.

Map ID	Site	Database(s)	EPA ID Number
39	**UP, DOWNROWN SAC-MANUFACTURED GAS PLAN** **400 I STREET** **SACRAMENTO, CA 95814**	**Manufactured Gas Plants**	**1009508587** **N/A**

Map ID	Site	Database(s)	EPA ID Number
45	**PDC PROPERTIES** **428 J ST** **SACRAMENTO, CA 95814**	**HAZNET** **LUST**	**S103981309** **N/A**

HAZNET:

Gepaid:	CAC001316368
Contact:	PDC PROPERTIES
Telephone:	9163815195
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	8395 JACKSON RD STE F
Mailing City,St,Zip:	SACRAMENTO, CA 958260000
Gen County:	Sacramento
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Disposal, Land Fill
Tons:	.1000
Facility County:	Sacramento

LUST:

Region:	STATE
Case Type:	Soil only
Cross Street:	4TH ST
Enf Type:	None Taken
Funding:	Not reported
How Discovered:	Not reported
How Stopped:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Global Id:	T0606700528
Stop Date:	Not reported
Confirm Leak:	1992-05-22 00:00:00
Workplan:	1992-05-22 00:00:00
Prelim Assess:	1992-05-22 00:00:00
Pollution Char:	Not reported
Remed Plan:	Not reported
Remed Action:	1992-05-22 00:00:00
Monitoring:	Not reported
Close Date:	1993-02-24 00:00:00
Discover Date:	1992-05-22 00:00:00
Enforcement Dt:	1965-01-01 00:00:00

Map ID	Site	Database(s)	EPA ID Number

PDC PROPERTIES (Continued) **S103981309**

Release Date: 1992-06-02 00:00:00
Review Date: 1993-03-18 00:00:00
Enter Date: 1992-06-10 00:00:00
MTBE Date: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Max MTBE GW ppb: Not reported
Max MTBE Soil ppb: Not reported
County: 34
Org Name: Not reported
Reg Board: 5S
Status: Case Closed
Chemical: Diesel
Contact Person: Not reported
Responsible Party: SHRA
RP Address: 1017 7TH ST # 200,SACRAMENTO,CA 95814
Interim: Yes
Oversight Prgm: LUST
MTBE Class: *
MTBE Conc: 0
MTBE Fuel: 0
MTBE Tested: Not Required to be Tested.
Staff: VJF
Staff Initials: DWB
Lead Agency: Local Agency
Local Agency: 34000L
Hydr Basin #: SACRAMENTO VALLEY (5
Beneficial: Not reported
Priority: 3
Cleanup Fund Id: Not reported
Work Suspended: No
Local Case #: Not reported
Case Number: 340623
Qty Leaked: Not reported
Abate Method: Excavate and Dispose - remove contaminated soil and dispose in approved site
Operator: UNKNOWN
Water System Name: TWO RIVERS RV PARK
Well Name: Not reported
Distance To Lust: 0
Waste Discharge Global ID: W0603900814
Waste Disch Assigned Name: 2000814-001GEN
Summary: Not reported

LUST:
Region: 5
Case Number: 340623
Staff Initials: VJF
Substance: DIESEL
Case Type: Soil only
Status: Case Closed
Lead Agency: Local
Program: LUST
MTBE Code: N/A

Map ID	Site	Database(s)	EPA ID Number
56	**A-B-C CLEANERS** **1120 7TH STREET** **SACRAMENTO, CA 95814**	**ENVIROSTOR**	**S100189381** **N/A**

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	34720001
Site Code:	Not reported
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-11-16 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5797222222222
Longitude:	-121.497777777778
Alias Name:	34720001
Alias Type:	Envirostor ID Number
APN:	NONE SPECIFIED
APN Description:	Not reported
Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

Map ID	Site	Database(s)	EPA ID Number
67	**723 "S" ST SITE (FORMER JUNKYARD), SACRAMENTO**** **723 S ST** **SACRAMENTO, CA**	**HAZNET** **SLIC** **ENVIROSTOR**	**S101481894** **N/A**

HAZNET:

Gepaid:	CAC001006776
Contact:	JEROME GILBERT
Telephone:	0000000000
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	324 TAPPAN TERRACE
Mailing City,St,Zip:	ORINDA, CA 945630000
Gen County:	Sacramento
TSD EPA ID:	AZD049318009
TSD County:	99
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	.3625
Facility County:	Sacramento

SLIC:

Region:	5
Facility Status:	Phase Two Remedial Investigation
Unit:	Facility is a Spill or site
Pollutant:	Cd, Cu, Pb, Zn
Lead Agency:	SAC Co.
Date Filed:	07/05/94
Report Date:	06/24/94
Date Added:	Not reported
Date Closed:	Not reported

ENVIROSTOR:

Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Central California
Facility ID:	34990003
Site Code:	Not reported
Assembly:	09
Senate:	06
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	1994-07-28 00:00:00
Restricted Use:	NO
Funding:	Not reported
Latitude:	38.5713888888889
Longitude:	-121.501111111111
Alias Name:	34990003 723 S STREET
Alias Type:	Envirostor ID Number Alternate Name
APN:	NONE SPECIFIED
APN Description:	Not reported

Map ID	Site	Database(s)	EPA ID Number

723 "S" ST SITE (FORMER JUNKYARD), SACRAMENTO (Continued)** **S101481894**

Comments:	Not reported
Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Confirmed:	NONE SPECIFIED
Confirmed Description:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Media Affected:	NONE SPECIFIED
Media Affected Desc:	Not reported
Management Required:	NONE SPECIFIED
Management Required Desc:	Not reported
Potential:	NONE SPECIFIED
Potenital Description:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
PastUse:	NONE SPECIFIED

FOCUS MAP 14 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ALTA	U001615228	WHITMORE	4MI E OF BAXTER ON I80	95814	HIST UST
BENICIA	U001615043	BENICIAMARTINEZ	I-680	95814	HIST UST
BISHOP	U001615139	MCGEE CREEK	35MI NO OF BISHOP ON US 395	95814	HIST UST
BOULEVARD	U001615049	BOULEVARD	OLD HWY 80	95814	HIST UST
BUELLTON	U001615052	BUELLTON	1 MI N OF ON OLD 101 HWY	95814	HIST UST
COLFAX	U001615072	COLFAX	ROUTE 174	95814	HIST UST
COUNTY	U001615159	PACHECO PASS	RTE 152 PM 27.0	95814	HIST UST
COUNTY	U001615138	MAYS-TAHOE VLY	RTE 50 / RTE 89 NORTH	95814	HIST UST
COUNTY	U001615126	KEEN CAMP	RTE 74,PM 65.23	95814	HIST UST
COUNTY	U001615084	DIDDY WELLS FOREST FIRE STATIO	HIWY 299-E	95814	HIST UST
COUNTY	U001615145	MIDWAY	1/4 W OF E JCT 8/98 ON RTE 98	95814	HIST UST
COUNTY	U001615050	BUCKHORN	27 MI W OF REDDING ON HWY 99	95814	HIST UST
COUNTY	U001615066	CHESTER	2 MI W OF CHESTER ON HWY 36	95814	HIST UST
COUNTY LINE, ADIN	U001615033	ADIN	HWY 299 AT THE LASSEN/MODOC	95814	HIST UST
DESERT CENTER	U001615083	DESERT CENTER	129476 US HWY 60	95814	HIST UST
DOWNIEVILLE	U001615087	DOWNIEVILLE	HWY49 2MI N OF DOWNIEVILLE	95814	HIST UST
HALF MOON BAY	U001615114	HALF MOON BAY	2MI S OF HALF MOON BAY ON HWY1	95814	HIST UST
INYOKERN	U001615121	INYOKERN	1/2MI W OF INYOKERN ON RTE 178	95814	HIST UST
LEBEC	U001615130	LEBEC	36282 GOLDEN STATE HIGHWAY	95814	HIST UST
MIRAMONTE	S101628221	PINEHURST	STAR RT 1 10 MI N OF RD	95814	CA FID UST, SWEEPS UST
PLATINA	U001615170	PLATINA	ON HWY 36 AT PM 8.7, SHA. CO.	95814	HIST UST
SACRAMENTO	S107769612	BARNETT INC	840 N 10TH ST H / J	95814	Sacramento Co. ML
SACRAMENTO	S101590789	RMC LONESTAR	N 16TH / ASB	95814	CA FID UST, SWEEPS UST
SACRAMENTO	S101481740	SMUD NORTH CITY SUBSTATION	20TH / NORTH B STREETS	95814	ENVIROSTOR
SACRAMENTO	1003878554	SMUD NORTH CITY SUBSTA	20TH & N B STS	95814	CERC-NFRAP
SACRAMENTO	1003878854	SACRAMENTO MUNICIPAL LDFL	28TH & A ST	95814	CERC-NFRAP
SACRAMENTO	S101628181	CAMP CONNELL	HWY 4 3/4MI E OF CP	95814	CA FID UST, SWEEPS UST
SACRAMENTO	U001615091	ECHO SUMMIT	RT 50 PM 66.7	95814	HIST UST
SACRAMENTO	S107737487	UNION PACIFIC BANNON STREET PARCEL	NORTH B STREET AND SEVENTH STREET	95814	VCP, ENVIROSTOR
SACRAMENTO	S107770070	SUTTER PRINTING COMPANY	1103 N B ST STE F	95814	Sacramento Co. ML
SACRAMENTO	1010082283	HERITAGE DRY CLEANERS	13100 BLOCK OF MONO WAY	95814	CERCLIS
SACRAMENTO	S106152287	INTERCITY PROPANE INC	1624 N C ST STE B	95814	Sacramento Co. ML
SACRAMENTO	S105268331	STATE CAPITOL	1000 CAPITOL MALL	95814	Sacramento Co. ML
SACRAMENTO	S107769815	JOHN E. MOSS FEDERAL BUILDING	650 CAPITOL MALL 8-100	95814	Sacramento Co. ML
SACRAMENTO	S108484569	WELLS FARGO CENTER	400 CAPITOL MALL STE 670	95814	Sacramento Co. ML
SACRAMENTO	1003879067	UNION CARBIDE CORP-LINDE DIV	CARBIDE CT	95814	CERC-NFRAP
SACRAMENTO	S106924640	CITY OF SACRAMENTO	NE CORNER OF 7TH / G	95814	SWEEPS UST
SACRAMENTO	S107541304	CALIFORNIA MARBLE & GRANITE	701 DOS RIOS ST STE F	95814	Sacramento Co. ML
SACRAMENTO	1003878883	PG&E GAS PLANT SACRAMENTO 206 2B	FOOT OF Y ST (NOW BROADWAY)	95818	CERC-NFRAP
SACRAMENTO	1003878752	WESTERN PACIFIC YD	NR FREEPORT BLVD & PORTOLA	95818	CERC-NFRAP
SACRAMENTO	1003878908	PG&E GAS PLANT SACRAMENTO 206 2	FRONT & T STS	95818	CERC-NFRAP
SACRAMENTO	S103678764	SMUD, FRONT & T STREETS	FRONT / T ST	95814	HAZNET, Cortese
SACRAMENTO	S106568278	FEDERAL COURTHOUSE - SACRAMENTO	5TH / I STREETS	95814	VCP, ENVIROSTOR

FOCUS MAP 14 ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SACRAMENTO	S106782305	FEDERAL COURTHOUSE - SACRAMENTO	5TH / I STREETS	95814	DEED
SACRAMENTO	1005415623	SHELL SERVICE STATION	225 N JIBBON	95814	RCRA-SQG, FINDS, HAZNET
SACRAMENTO	1003878696	FORMER CITY LDFL	NW OF 28TH & N B STS	95816	CERC-NFRAP
SACRAMENTO	S104795612	UNION PACIFIC RAILROAD	3675 W PACIFIC AVE	95818	HAZNET, Sacramento Co. CS, Sacramento Co. ML
SACRAMENTO	S101481621	CALTRANS, I-5 Q STREET OFF-RAMP	I-5 Q STREET OFF-RAMP	95814	RESPONSE, DEED, ENVIROSTOR, H Cal-Sites
SACRAMENTO	S104655087	DEPT GENERAL SERVICES - CAPITOL SQ	450 N ST 1200	95814	Sacramento Co. ML
SACRAMENTO	S105270022	DOWNTOWN PLAZA NORTH MALL	596 K ST #ML/N	95814	Sacramento Co. ML
SACRAMENTO	S105271217	VINCZE GARAGE	1522 Q ST ALLEY	95814	Sacramento Co. ML
SACRAMENTO	S105808130	SCOFIELD'S FURNITURE	677 S ST #A/B	95814	Sacramento Co. ML
SACRAMENTO	S105960209	LEVEL (3) COMMUNICATIONS - SCRMCAAI	660 J ST 150	95814	Sacramento Co. ML
SACRAMENTO	S105960249	LEGISLATIVE OFFICE BUILDING	1020 N ST STE 130	95814	Sacramento Co. ML
SACRAMENTO	S106387879	STATE OF CA DEPT OF FOOD AND AG	560 J ST 170-B	95814	Sacramento Co. ML
SACRAMENTO	S106387880	DUPLICATE - SEE FA0014571	660 J ST 150	95814	Sacramento Co. ML
SACRAMENTO	S106387883	MIKUNI MIDTOWN LTD (MIKUNI JAPANESE	1530 J ST 150	95814	Sacramento Co. ML
SACRAMENTO	S106541873	VERIZON WIRELESS - SAC DOWNTOWN	1230 N ST FLR 15TH	95814	Sacramento Co. ML
SACRAMENTO	S106780474	CAPITOL PLACE	915 L ST STE 1030	95814	Sacramento Co. ML
SACRAMENTO	S106967420	GLOBAL CROSSING TELECOMM INC	1303 J ST 300 / 700	95814	Sacramento Co. ML
SACRAMENTO	S107769753	GLOBAL CROSSING TELECOMMUNICATIONS	770 L ST 650	95814	Sacramento Co. ML
SACRAMENTO	S107769834	LENSCRAFTERS STORE #727	515 L ST A1024	95814	Sacramento Co. ML
SACRAMENTO	S107770114	US FEDERAL BLDG & US POST OFFICE	801 I ST 121	95814	Sacramento Co. ML
SACRAMENTO	S107770139	EXCEL TELECOMMUNICATIONS	770 L ST STE 850	95814	Sacramento Co. ML
SACRAMENTO	S108195672	LEVEL 3 COMMUNICATIONS, LLC	770 L ST STE 120	95814	Sacramento Co. ML
SACRAMENTO	S108484475	THE SENATOR BLDG	1121 L ST STE 105	95814	Sacramento Co. ML
SACRAMENTO	S108484488	ST OF CA DEPT OF GEN SVC	1304 O ST STE 300	95814	Sacramento Co. ML
SACRAMENTO	S108484503	FRESH CLEANERS	1809 S ST 102	95814	Sacramento Co. ML
SACRAMENTO	S108484640	MPOWER COMMUNICATIONS INC	770 L ST STE 100	95814	Sacramento Co. ML
SACRAMENTO	S108649294	RUBICON GSA I SACTO CA LLC	1325 J ST STE 100	95814	Sacramento Co. ML
SACRAMENTO	S108649308	770 L ST INVESTMENT GROUP INC	770 L ST STE 1040	95814	Sacramento Co. ML
SACRAMENTO	S108649326	BRIDGEWAY TOWERS OWNER ASSOCIATION	500 N ST STE 23	95814	Sacramento Co. ML
SACRAMENTO	S105736190	WATKINS PROPERTY	3400 R ST (AKA: 3301 S ST)	95816	LUST
SACRAMENTO	S105174026	STATE OFFICE BUILDING # 819	714 P ST (CASE # 2)	95814	LUST
SACRAMENTO	S106162803	FORMER GASCO STATION #758	505 30TH STREET	95816	LUST
SACRAMENTO	A100302572	UTILITIES SAC RIVER WTP	1 WATER STREET	95814	AST
SIMMLER (NO ZIP)	U001615201	SIMMLER	ROUTE 58	95814	HIST UST
SONORA	U001615133	LONGBARN	HWY 108,LONG BARN	95814	HIST UST
SOUTH LAKE TAHOE	S101628236	SO LAKE TAHOE	1/4MILE S RTE50 ON R	95814	CA FID UST, SWEEPS UST
TAHOE CITY	S101628238	TAHOE CITY	1/2MI N/W TAHOE CITY	95814	CA FID UST, SWEEPS UST
TAHOE CITY	U001615207	TAHOE CITY	1/2MI N/W TAHOE CITY ON RTE 89	95814	HIST UST
TO MIRAMONTE)	U001615168	PINEHURST	STAR ROUTE'(1.10 MI N OF C. RD	95814	HIST UST
TOPAZ	U001615215	TOPAZ INSPECTION STATION	1/2 MILE S OF STATE LINE HWY 3	95814	HIST UST
TRINITY CENTER	U001615217	TRINITY CENTER	PM 59.5 ON RTE 3	95814	HIST UST

Section 3

County Level Orphan Sites

YOLO COUNTY, CA - ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BROOKS	S105022942	BERRYESSA PEAK	BERRYESSA PEAK RD		LUST, Cortese
CACHE CREEK	92262244	COUNTY RD 17	COUNTY RD 17		ERNS
CAPAY	S105672218		25073 HWY. 16		CHMIRS
CLARKSBURG	A100225856	CLARKSBURG PLANT	SOUTH CENTER ST.		AST
CLARKSBURG	S103980607	PACIFIC GAS & ELECTRIC NETHERLAND SUB	CENTRAL AVE W OF JEFFERSON BLVD	00000	HAZNET
CLARKSBURG	S105675665		CORNER OF Z LINE RD. AND COURTLAND		CHMIRS
CLARKSBURG	S105675666		NORTH COURTLAND AT Z LINE RD.		CHMIRS
CLARKSBURG	S105023304	WILLOW POINT RANCH	JEFFERSON BLVD / BABEL		LUST, Cortese
CLARKSBURG	S103679487	PACIFIC GAS & ELECTRIC CO/YOLO CNTY	ON LEVEE ROAD BETWEEN DELHI RD	00000	HAZNET
CLARKSBURG	S105882906		WAUKEENA RD.		CHMIRS
CLARKSBURG	S106800651	CLARKSBURG WINE CO	32265 WILLOW AVE		CA WDS
DAVIS	S105936581	AT&T WIRELESS SERVICES	I-80 / CHILES RD.	0	EMI
DAVIS	S100279783		CR 29 / 92 A		CHMIRS
DAVIS	S105940559	YOLO PIPELINE CORP.	RD. 30, 1.5 MI EAST OF RD. 105	0	EMI
DAVIS	S105884907		RD 32 A AND RD 105		CHMIRS
DAVIS	92256188	RD 32A AND MACE BLVD	RD 32A AND MACE BLVD		ERNS
DAVIS	S102008123	DAVIS MIGRANT CENTER WWTF	RD 36 / RD 105		CA WDS
DAVIS	92298206	MP 75.6	MP 75.6		ERNS
DAVIS	S108405329		MM 77 ON THE MARTINEZ SUBDIVISION		CHMIRS
DAVIS	92271065	MP 78	MP 78		ERNS
DAVIS	92270755	MP 78	MP 78		ERNS
DAVIS	92270754	MP 78	MP 78		ERNS
DAVIS	S108405485		MM 78.7 ON THE MARTINEZ SUBDIVISION		CHMIRS
DAVIS	S105667696		EB 80 WEST OF RICHARDS		CHMIRS
DAVIS	S105658281		HWY 80, EB AT MACE BLVD		CHMIRS
DAVIS	S105652033		EAST 8TH STREET - MAIN LINE		CHMIRS
DAVIS	92263033	ALTRAS SITE/U.C. DAVIS PROPERTY	ALTRAS SITE/U.C. DAVIS PROPERTY		ERNS
DAVIS	S106400891		BY AMTRAK DEPOT		CHMIRS
DAVIS	S106230580	UNION PACIFIC RAILROAD AMTRAK TRAIN DEPOT	2ND AND H STS		SLIC
DAVIS	S105638796		5TH AND G ST.		CHMIRS
DAVIS	S108206354	EVELAND KARRER	APN 042-060-061	--	HAZNET
DAVIS	S105667866		CR98 AT CR31		CHMIRS
DAVIS	S105885367		2013 BEARDON DR.		CHMIRS
DAVIS	2002619758	2013 BEARDON DRIVE	2013 BEARDON DRIVE	0	ERNS
DAVIS	S107451251		BETWEEN I AND J ST		CHMIRS
DAVIS	S105638011		BIDWELL COURT RESDENTIAL AREA		CHMIRS
DAVIS	S105667051		BRAGG HALL, 12 SHILTS AVE.		CHMIRS
DAVIS	92257368	CAMPBELL ROAD	CAMPBELL ROAD		ERNS
DAVIS	S100280248		CENTRAL PARK 5TH / C STREETS		CHMIRS
DAVIS	S105255291	HYDRAULICS LABORATORY	CIVIL / ENV. ENGINEERING		CA WDS
DAVIS	S105632451		CORNER OF COWELL BLVD AND OAK AVENUE		CHMIRS
DAVIS	S100279378		CORNER CO RD 30B / CO RD. 104		CHMIRS
DAVIS	S106104549	CAMPUS LANDFILL-STORMWATER	COUNTRY RD 98		CA WDS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DAVIS	S100280272		COUNTY ROAD 29 / CR101A		CHMIRS
DAVIS	S106395967		COUNTY RD 105 MPM 79.2 MARTINEZ SUBDIVISION		CHMIRS
DAVIS	S105887213		COUNTY ROAD 105, DOT #751224 V		CHMIRS
DAVIS	S105885314		COUNTY RD 105 AND COUNTY RD 32		CHMIRS
DAVIS	S106100780	SEED RESEARCH & DEV FACILITY	28605 COUNTY RD 104		CA WDS
DAVIS	S103618156	HUNT-WESSON INC.	COUNTY ROAD 28H		CA WDS
DAVIS	S106104534	YOLO CO AIRPORT-STORMWATER	COUNTY ROADS 29 / 95		CA WDS
DAVIS	S105639898		COUNTY ROAD 29 AND 98		CHMIRS
DAVIS	S105939908	TEICHERT AGGREGATES	40060 COUNTY ROAD 29/HWY 113	0	SLIC, EMI
DAVIS	2006788140	ON CRANBROOK COURT RD	ON CRANBROOK COURT RD		ERNS
DAVIS	S105665709		DAVIS SITE, MACE BLVD		CHMIRS
DAVIS	S105639303		300 FT EAST OF CO RD 89 / 29		CHMIRS
DAVIS	1001612600	AQUATIC CENTER/ANIMAL SCIENCE	ENV HEALTH / SAFETY OFFICE		CA WDS
DAVIS	S105630543		EUREKA AVE 114 TH ST		CHMIRS
DAVIS	96474863	FRONTIER FERTILIZERS 2ND ST	FRONTIER FERTILIZERS 2ND ST		ERNS
DAVIS	S106717960	DAVIS CENTER PROJECT	5TH / G STREETS		SLIC
DAVIS	S106230581	DAVIS CENTER PROJECT	5TH / G STS		SLIC
DAVIS	98424338	5 GALLON CLOSED PAIL/ PAIL DISCOVERED ON TRAIN TRESSEL (RICH	5 GALLON CLOSED PAIL/ PAIL DISCOVERED ON TRAIN TRESSEL (RICH		ERNS
DAVIS	S106230586	UCD PESTICIDE APPLICATION SITE UP TO 1998 ARCHIVE	GARROD RD WEST OF HIGHWAY 113		SLIC
DAVIS	S106104561	ENVIRONMENTAL SERVICES FAC	GARROD DRIVE		CA WDS
DAVIS	S105642057		5715 HAMMEL ST		CHMIRS
DAVIS	S106104564	UNIV AIRPORT	HOPKINS / AIRPORT RD		CA WDS
DAVIS	S107452022		HUTCHINSON DR. FROM LARUE TO HOPKINS		CHMIRS
DAVIS	S105659531		HUTTCHINSON CROSS OF HOPKINS RD, CRU TRAILER		CHMIRS
DAVIS	S107454050		WB I80 ON SR113 N OFFRAMP		CHMIRS
DAVIS	S105630823		INT 80 AND CHILDS OFF RUMP		CHMIRS
DAVIS	S105890279		INTERSECTION ALVARADO / ANDERSON STREETS		CHMIRS
DAVIS	90465419	INTERSECTION OF HWY 95 AND 29	INTERSECTION OF HWY 95 AND 29		ERNS
DAVIS	S106855507	MARTIN FERTILIZER COMPANY	MACE BLVD		SLIC
DAVIS	S105890337		MACE BLVD. BETWEEN COWELL / SOUTH EL MACERO		CHMIRS
DAVIS	S107138776	PG&E SILVERLIGHT	MACE BLVD		SLIC
DAVIS	S106230585	MCCLELLAN AIR FORCE BASE, DAVIS TRANSMITTER SITE	EL MACERO RD / 5 MILES SOUTH OF HIGHWAY 80, 316		SLIC
DAVIS	S105653312		MARTINEZ SUBDSIVISION, MPM 75.6		CHMIRS
DAVIS	2001553422	MIDDLE OF A WHEAT FIELD	MIDDLE OF A WHEAT FIELD	0	ERNS
DAVIS	S106400134		MILE POST 76.8 MARTINEZ SUB DIV.		CHMIRS
DAVIS	S108402223		MILE POST 76.28 MARTINEZ SUB. DIV.		CHMIRS
DAVIS	S105660866		MILE POST MARKER 73.8		CHMIRS
DAVIS	92271063	MILE POST 78	MILE POST 78		ERNS
DAVIS	87464071	MOLLER CORP (DAVID RICHARDSON)	MOLLER CORP (DAVID RICHARDSON)		ERNS
DAVIS	S108403596		MOORE BLVD 200' W OF SARGEANT PLACE		CHMIRS
DAVIS	S108403300		MOW DEPOT		CHMIRS
DAVIS	S106400354		MPM 79.2 ON THE MARTINEZ SUBDIVISION		CHMIRS
DAVIS	S105675507		MPM 75, MARTINEZ SUBDIVISION		CHMIRS
DAVIS	S107452771		MPM 79.20 OF THE MARTINEZ SUBDIVISION.		CHMIRS

YOLO COUNTY, CA - ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DAVIS	S105637425		3MI WEST OF MACE BLVD		CHMIRS
DAVIS	S105657884		NORTH OF DAVIS, WASTE WATER PLANT		CHMIRS
DAVIS	S106104539	INACTIVE LANDFILL CELL S	OFFICE OF ENV HEALTH / SAFETY		CA WDS
DAVIS	S105023487	UC DAVIS, FORMER LEHR FAC	OLD DAVIS RD 1.5 MI S. OF		Cortese
DAVIS	S106707888	LABORATORY FOR ENERGY RELATED HEALTH RESEARCH	OLD DAVIS RD		SLIC
DAVIS	S105671003		OLD DAVIS RD. SOUTH OF I 80		CHMIRS
DAVIS	S100279707		OLIVE DRIVE		CHMIRS
DAVIS	S105677532		ORCHARD PARK AREA		CHMIRS
DAVIS	S105670780		PATWIN ELEMENTARY SCHOOL, 2222 SHASTA DRIVE		CHMIRS
DAVIS	S105657728		RAILROAD OVERPASS - RICHARDS / F STREET		CHMIRS
DAVIS	S106400492		CO RD 152 AND MACE BLVD		CHMIRS
DAVIS	91230774	CO RD. 102, PAST THE OLD SEWER PLANT	CO RD. 102, PAST THE OLD SEWER PLANT		ERNS
DAVIS	91239083	CO RDS 27 & 93	CO RDS 27 & 93		ERNS
DAVIS	92256634	RECREATION HALL UC DAVIS	RECREATION HALL UC DAVIS		ERNS
DAVIS	S108404256		RICHARDS BLVD		CHMIRS
DAVIS	S105657729		RICHARDS BLVD NEAR 1ST ST / RAIL LINE.		CHMIRS
DAVIS	S106855397	DEGANAWIDAH-QUETZALCOATL UNIVERSITY (D-Q UNIVERSIT	ROAD 31		SLIC
DAVIS	2006798823	ROAD 105 AT COUNTY ROAD 32	ROAD 105 AT COUNTY ROAD 32		ERNS
DAVIS	S106230601	DEGANAWIDAH-QUETZALCOTI UNIVERSITY (FORME MILITAR	ROAD 31		SLIC
DAVIS	S106103576	DAVIS STP	45400 CO ROAD 28H		CA WDS
DAVIS	S105645357		CO ROAD 94 CROSS ST, CO ROAD 27		CHMIRS
DAVIS	S100878604	YOLO ENERGY PARTNERS	ROAD 28H	00000	HAZNET
DAVIS	S105636897		705 RUSSEL BLVD		CHMIRS
DAVIS	8874525	RUSSELL BLVD @ DAVIS	RUSSELL BLVD @ DAVIS		ERNS
DAVIS	S105667104		4309 SECOND ST.		CHMIRS
DAVIS	S107448154		1 SHIELDS AVE - MONDAVI CENTER AT UCD		CHMIRS
DAVIS	S100279305		SPRUCE LN AT CLAREMONT RD		CHMIRS
DAVIS	S106483817	UNION PACIFIC RAILROAD - DAVIS AMTRAK STATION	G STREET		SLIC
DAVIS	S106230582	MUNICH AMALGAMATED LLC (FORMER COURT GALVANIZING)	2500 5TH STREET		SLIC
DAVIS	S105670904		2600 5TH STREET		CHMIRS
DAVIS	S106393895		RR TRACKS IMMEDIATELY S OF 2ND / L ST. INTERSEC		CHMIRS
DAVIS	90465270	TRACKS NEAR HWY 80/MP 79.2/24 MI NW DAVI	TRACKS NEAR HWY 80/MP 79.2/24 MI NW DAVI		ERNS
DAVIS	8873754	TREES APT. COMPLEX (D.GOBSON)	TREES APT. COMPLEX (D.GOBSON)		ERNS
DAVIS	S105255289	UC DAVIS MAIN STP	UNIVERSITY CAMPUS		CA WDS
DAVIS	S102008111	MAIN STP	UNIVERSITY CAMPUS		Cortese
DAVIS	2006812523	VICK FAZIO WILDLIFE PRESERVE	VICK FAZIO WILDLIFE PRESERVE		ERNS
DAVIS	S105660098		4217- 4307 VISTOSA		CHMIRS
DAVIS	S105660169		WILDHORSE DEVELOPMENT GOLF COARSE, NEAR CLUB HOUSE		CHMIRS
DAVIS	S106391748		YOLO CENTRAL LANDFILL COUNTY RD 28H / COUNTY RD		CHMIRS
DAVIS	S105637320		YOLO LANDFILL CO RD 28H AND CO RD 104		CHMIRS
DAVIS	S100280484		YOLO BYPASS, WEST END OF I-80 CAUSEWAY		CHMIRS
DAVIS	S100279862		YOLO CO. CENTRAL LANDFILL		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DAVIS	S100217203		YOLO CENTRAL LANDFILL		CHMIRS
DAVIS (NR)	90186277	CO RD #31 AT SR 113	CO RD #31 AT SR 113	-	ERNS
DAVIS (NR)	90167200	YOLO CASEWAY NORTH OF SP TRACKS	YOLO CASEWAY NORTH OF SP TRACKS		ERNS
DAVIS (NR)	90173483	YOLO CENTRAL LAND FILL CO. RD 28H	YOLO CENTRAL LAND FILL CO. RD 28H		ERNS
DUNNIGAN	S106835558	MICHAEL V. DOHERTY	CR5 / CR89	0	EMI
DUNNIGAN	S102008085	DUNNIGAN ROADSIDE REST WWTF	INTERSTATE 5		CA WDS
DUNNIGAN	S106841255	TOSCO NORTHWEST COMPANY	INTERSTATE 5 / CR 8	0	EMI
DUNNIGAN	S106834928	M. V. DOHERTY	CR 5 / CR 89	0	EMI
DUNNIGAN	S102008083	BILL/KATHY S WWTF	RD 89		CA WDS
DUNNIGAN	S105023533	BULK FUEL STATION	HWY 99 AT YOLO CO. RD 6		Cortese
DUNNIGAN	S106104541	CLIFFS AUTO CENTER	3400 HWY 99 W.		CA WDS
DUNNIGAN	S106837998	RAMOS OIL CO. INC. - DUNNIGAN	4040 HIGHWAY 99	0	EMI
DUNNIGAN	S106829331	COUNTY LINE WAREHOUSE	HIGHWAY 99W, 3 MI N OF DUNNIGN	0	EMI
DUNNIGAN	S105639097		BEACON TRUCKSTOP STATION COUNTY ROAD 8 AND I-5		CHMIRS
DUNNIGAN	S100219067		BEACON STATION - CO RD 8		CHMIRS
DUNNIGAN	S105651407		NORTH BOUND I-5 JUST NORTH OF COUNTY ROAD B.		CHMIRS
DUNNIGAN	S106447061	RITCHIE BROS AUCTIONEERS	COUNTY RD 99W		CA WDS
DUNNIGAN	S105774920	BEST WESTERN HOTEL/JIB/MUMMA	COUNTY RD 6 @ COUNTY RD 89		CA WDS
DUNNIGAN	A100108603	HERSHEY JUNCTION DEHY.	1998 COUNTY RD 89		AST
DUNNIGAN	2004718426	COUNTY RD 7 EAST END AT	COUNTY RD 7 EAST END AT		ERNS
DUNNIGAN	S104587018	CAMPERS INN RV PARK	2501 COUNTY #88 RD		CA WDS
DUNNIGAN	S106397339		NB I-5 AT THE REST STOP IN DUNNIGAN		CHMIRS
DUNNIGAN	S103679041	CHEVRON 92466	INT 5 / COUNTY RD 6	00000	HAZNET
DUNNIGAN	S106104569	BONANZA DAIRY	JOHNS SCHOOL RD / CNTY LINE		CA WDS
DUNNIGAN	S106717962	CHEVRON USA - CELONI BULK FUEL TERMINAL	ROAD 6 / ROAD 99		SLIC
DUNNIGAN	S106230603	PG&E GAS DEHYDRATOR STATION, HERSHEY JUNCTION	ROAD 89		SLIC
DUNNIGAN	S106230602	CHEVRON USA - CELONI BULK FUEL TERMINAL	ROAD 6 AND ROAD 99		SLIC
DUNNIGAN	S106112404	PG&E GAS DEHYDRATOR STATION, MUMMA DRIP II	WHITE RD, 6 MILES EAST OF DUNNIGAN		SLIC
EL MACERO	S103988038	SILVER LIGHT STATION	N/E CORNER OF MACE BLVD / INTERSTATE 80	00000	HAZNET
ESPARTO	S105556776	B & R COMPANY (FORMER BCSC) - ESPARTO	26797 HIGHWAY 16		SLIC
ESPARTO	S105939911	TEICHERT AGGREGATES	27944 CR 19A	0	EMI
ESPARTO	S100279789		ALLEY BETWEEN ALPHA AVE / MAITIG		CHMIRS
ESPARTO	S105938960	PACIFIC BELL	NW CORNER OF CAPAY / WINTERS	0	EMI
ESPARTO	S102008100	R.H. PHILLIPS VINEYARD	26836 COUNTY ROAD 12-A		CA WDS
ESPARTO	S106103578	ESPARTO PLANT	27944 CO RD 19A		CA WDS
ESPARTO	S106112498	ESPARTO ASPHALT PLANT	27944 ROAD 19A		SLIC
ESPARTO	S106840587	TEICHERT AGGREGATES-REIFF ROCK	ROAD 19A, 1MI E OF ROAD 87	0	EMI
KITES LANDING	S105630156		E/B SR 45		CHMIRS
KNIGHT'S LANDING	96511990	UNKNOWN	UNKNOWN		ERNS
KNIGHTS LANDING	S106389335		SR 45 2.4 MILES NORTH OF KNIGHTS LANDING AT COUNTY		CHMIRS
KNIGHTS LANDING	S105886960		BRIDGE ON SR 113		CHMIRS
KNIGHTS LANDING	S105677794		NB CR102 JUST S OF THE TOWN OF KNIGHTS LANDING		CHMIRS
KNIGHTS LANDING	S106486584	WELLHEAD ELECTRIC CO. (KARNAK FACILITY)	ENSELY ROAD		SLIC
KNIGHTS LANDING	S106230562	WELLHEAD ELECTRIC CO. (KARNAK FACILITY)	ENSELY AND IRMOUR RDS, EAST OF KNIGHTS LANDING		SLIC
KNIGHTS LANDING	S104571141	AA PRODUCTIONS	125 KNIGHTS LANDING	00000	HAZNET
KNIGHTS LANDING	S106825209	AA PRODUCTION	KNIGHTS LANDING GAS FIELD,CR17	0	EMI

City	EDR ID	Site Name	Site Address	Zip	Database(s)
KNIGHTS LANDING	S106836556	OAKLAND BEAN CLEANING & STORAG	ROAD 116 / SP RR TRACKS	0	EMI
KNIGHTS LANDING NR	8874644	FREMONT WEIR	FREMONT WEIR		ERNS
LAKE BERRYESSA	S100218944		HIWAY 128 3/4 MI SO LAKE BERRYESSA DAM		CHMIRS
LAPALMA	2002590665	705 RUSSEL BLVD	705 RUSSEL BLVD	0	ERNS
MADISON	S105256626	MADISON WWTF	9 HWY 16 / CO RD 89		CA WDS
MADISON	S106830112	DIXON READY MIX	29017 HWY 16	0	EMI
MADISON	S105937738	FARMERS GRAIN ELEVATOR	29039 CR 26	0	EMI
MADISON	S106104546	MADISON SAND & GRAVEL	COUNTY RD 89		CA WDS
MADISON	S105651609		COUNTY RD 19 1/2 WEST I-505		CHMIRS
MADISON	S106840405	SYAR INDUSTRIES. INC. (MADISN)	COUNTY ROAD	0	EMI
NR. WOODLAND	8716438	SACRAMENTO RIVER/SO. OF:FEATHER RIVER	SACRAMENTO RIVER/SO. OF:FEATHER RIVER		ERNS
OUT SIDE OF CAPAY	S103678206	1X PACIFIC GAS & ELECTRIC	BALDMOUNTAIN 6 M. N. OF CAPAY	00000	HAZNET
S DAVIS	8714448	(RP)CHEVRON (J.VOLGEL)	(RP)CHEVRON (J.VOLGEL)		ERNS
SACRAMENTO	8863780	BERTH 1;PORT OF SACRAMENTO	BERTH 1;PORT OF SACRAMENTO		ERNS
SACRAMENTO	2005706409	4200 W CAPITAL	4200 W CAPITAL		HMIRS
SACRAMENTO	96481115	PHLANGE LEAK/UNKNOWN CAUSE	PHLANGE LEAK/UNKNOWN CAUSE		ERNS
SACRAMENTO	2006796495	1600 RALEY CT. SUITE 50-60	1600 RALEY CT. SUITE 50-60		ERNS
SACRAMENTO	2002626165	WEST SACRAMENTO	WEST SACRAMENTO	0	ERNS
SACRAMENTO	2000530380	SACRAMENTO RIVER	SACRAMENTO RIVER	0	ERNS
SACRAMENTO	96497014	TANK TRUCK / WAS OVERFILLED WHICH CAUSED MATERIALS TO VENT	TANK TRUCK / WAS OVERFILLED WHICH CAUSED MATERIALS TO VENT		ERNS
SACRAMENTO	90158324	ON YOLO CAUSEWAY	ON YOLO CAUSEWAY		ERNS
TYNDALL LANDING	S100280335		HIGHWAY 45 / CR 95B		CHMIRS
UNINC	S100280259		CR 17 / CR 95A		CHMIRS
UNINC	S100279552		COUNTY RD 27 526'N RD 25A		CHMIRS
UNINC	S100280179		E/B CR14 FROM CR 101 TO CR 102		CHMIRS
UNINC	S100279636		N/B I-5 OFFRAMP / SR 113		CHMIRS
UNINC	S100280550		I-5 S/O COUNTY RD. 103		CHMIRS
UNINC	S100279517		I-5 S/ROAD 4		CHMIRS
UNINC	S105890292		YOLO CAUSEWAY-S.P. RAILROAD RIGHT OF WAY		CHMIRS
UNINC CO	S106391681		SYCAMORE SLOUGH. COUNTY ROAD A, .5 MI SOUTH OF SR		CHMIRS
UNINCORPORATED	S102817594	DOW CHEMICAL CO (PUTAH SINK)	1800 E OF COUNTY ROAD 35 /	00000	HAZNET
UNINCORPORATED COUN	S105673582		RD. 101 BTWN RD. 25 AND RD. 27		CHMIRS
UNINCORPORATED COUN	S105653119		CR 105 IN DAVIS, CROSSING# 751224V		CHMIRS
UNINCORPORATED COUN	S108404246		HWY 13 AT CR 27		CHMIRS
UNINCORPORATED COUN	S108401590		HWY 16 EB MM 27.7		CHMIRS
UNINCORPORATED COUN	S105676869		CR25 3 MILES E OF CR102 ON SO. SIDE - CONWAY RANCH		CHMIRS
UNINCORPORATED COUN	S105885376		SB 5 AT COUNTY RD 17		CHMIRS
UNINCORPORATED COUN	S105676104		NB 5 AT CR102		CHMIRS
UNINCORPORATED COUN	S105666119		SB 5 AT COUNTY ROAD 22, NEAR WOODLAND		CHMIRS
UNINCORPORATED COUN	S105886588		29770 CR 8		CHMIRS
UNINCORPORATED COUN	S105667816		EB 80 JSE RICHARDS BLVD		CHMIRS
UNINCORPORATED COUN	S105885823		CR 89 S/O CR 14		CHMIRS
UNINCORPORATED COUN	S107451538		CR 98 SOUTH OF CR 25		CHMIRS
UNINCORPORATED COUN	S105882349		I5 AT THE YOLO BYPASS		CHMIRS
UNINCORPORATED COUN	S105656300		CR102 AT CR25		CHMIRS
UNINCORPORATED COUN	S105676816		CR102 AT CR14		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
UNINCORPORATED COUN	S105676103		CR102 AT CR29		CHMIRS
UNINCORPORATED COUN	S105675960		CR96 AT CR27		CHMIRS
UNINCORPORATED COUN	S107452980		NORTH BOUND I-5 COUNTY ROAD 17 OFF RAMP		CHMIRS
UNINCORPORATED COUN	S106395418		CORNER OF COUNTY RD. 13 BETWEEN ROADS 96 / 97,		CHMIRS
UNINCORPORATED COUN	S106394296		COUNTY RD. 25 BETWEEN COUNTY RD. 89 / COUNTY RD.		CHMIRS
UNINCORPORATED COUN	S106394153		COUNTY ROAD 95, 1/4 MILE SOUTH OF COUNTY ROAD 29,		CHMIRS
UNINCORPORATED COUN	S105885442		COUNTY ROAD 29 JUST EAST OF HWY 113		CHMIRS
UNINCORPORATED COUN	S105677721		COUNTY ROAD 122 AND COUNTY ROAD 124		CHMIRS
UNINCORPORATED COUN	S105666678		COUNTY RD 87 AND 19		CHMIRS
UNINCORPORATED COUN	S105659638		1373 CRESSWELL DRVIE		CHMIRS
UNINCORPORATED COUN	S105886291		I-80 EAST OF DAVIS, ON THE YOLO CAUSEWAY.		CHMIRS
UNINCORPORATED COUN	S105885455		NB HWY 505 JUST SOUTH OF SR16, NEAR WOODLAND		CHMIRS
UNINCORPORATED COUN	S106394892		EB HWY50 AT PIONEER BRIDGE, CLOSEST CITY W. SACRAM		CHMIRS
UNINCORPORATED COUN	S107452873		NB I-5 1 MILES NORTH OF COUNTY RD. 8, CLOSEST TOWN		CHMIRS
UNINCORPORATED COUN	S105883719		EB I-80 AT THE YOLO CAUSEWAY, NEAR WEST SACRAMENTO		CHMIRS
UNINCORPORATED COUN	S106393707		WB I-80, THE SHORT BRIDGE BEFORE THE YOLO CAUSEWA	UNK	CHMIRS
UNINCORPORATED COUN	S107453571		SB I5 AT THE DUNNIGAN REST AREA		CHMIRS
UNINCORPORATED COUN	S106398653		JEFFERSON BLVD, APPROX 6 MILES SOUTH OF WEST SACRA		CHMIRS
UNINCORPORATED COUN	S106393418		1ST LOCATION: 1/2 MILE SOUTH OF THE INTERSECTION		CHMIRS
UNINCORPORATED COUN	S105666508		MACE AT 2ND ST.		CHMIRS
UNINCORPORATED COUN	S105666091		MARTINEZ SUBDIVISION, MPM 79.2, AT I80		CHMIRS
UNINCORPORATED COUN	S105660813		1/2 MILE WEST ON HWY 128 AT LAKE SOLANO		CHMIRS
UNINCORPORATED COUN	S105667736		2 MILES EAST OF INTERSECTION CR 102 AND CR 16		CHMIRS
UNINCORPORATED COUN	S106395728		MOORE CANAL NEAR THE INTERSECTION OF SR 16 AND COU		CHMIRS
UNINCORPORATED COUN	S105666599		MPM 79.2 , CR105 CROSSING		CHMIRS
UNINCORPORATED COUN	S105671309		I-5 NORTH BOUND / NORTH OF CO RD 12		CHMIRS
UNINCORPORATED COUN	S106393474		NORTH OF MOODY SLOUGH RD AT RAIL ROAD RD AND I5 AN		CHMIRS
UNINCORPORATED COUN	S106392603		SOUTH OF CO RD 28H, APPROX 2MI EAST OF CO RD 102 I		CHMIRS
UNINCORPORATED COUN	S105653075		I5 ON YOLO BYPASS.		CHMIRS
UNINCORPORATED COUN	S106395445		PILOT GAS STATION, @ COUNTY 8 / I5, NEAREST TOWN		CHMIRS
UNINCORPORATED COUN	S106398463		5 POLES EAST OF RD. 103, 3/4 MILE NORTH OF RD. 18B		CHMIRS
UNINCORPORATED COUN	S105665465		PUMP HOUSE ROAD AND SOUTH RIVER ROAD		CHMIRS
UNINCORPORATED COUN	S107451456		CO RD 4 AT RD 89		CHMIRS
UNINCORPORATED COUN	S105659459		SOUTH RIVER RD JSO BABEL RD AT 30 MPM SIGN		CHMIRS
UNINCORPORATED COUN	S107453715		SOUTH RIVER RD. AT CR142		CHMIRS
UNINCORPORATED COUN	S107453367		RIVER RD. NEAR CR122		CHMIRS
UNINCORPORATED COUN	S105886295		CO ROAD 4, AT CO ROAD 6		CHMIRS
UNINCORPORATED COUN	S105883878		CO. ROAD 92E AT CO. ROAD 29, NEAR DAVIS		CHMIRS
UNINCORPORATED COUN	S105675594		ROAD 8 AT NB 5 IN THE DUNNEGAN REST AREA		CHMIRS
UNINCORPORATED COUN	S107453720		SOUTH SIDE OF PUTAH CREEK RD APPROXIMATELY 2 MILES		CHMIRS
UNINCORPORATED COUN	S106394813		AT THE COUNTY LANDFILL ON COUNTY ROAD 28H, CLOSEST		CHMIRS
UNINCORPORATED COUN	S106393847		ON THE SACRAMENTO RIVER, 4-5 MILES SOUTH OF THE		CHMIRS
UNINCORPORATED COUN	S106395118		UNION PACIFIC RR, SUBDIVISION OF MARTINEZ, MILE PO		CHMIRS
UNINCORPORATED COUN	S105655526		UNOCAL PLANT, 3961 CHANNEL DRIVE		CHMIRS
UNINCORPORATED COUN	S105659087		200 YARDS W/O HWY 5 ON OLD RIVER RD.		CHMIRS
UNINCORPORATED COUN	S106394562		YOLO CO. LANDFILL,MIDWAY BETWEEN WOODLAND AND DAVI		CHMIRS
UNINCORPORATED COUN	S108402225		YOLO CO. LANDFILL		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
UNINCORPORATED COUN	S107454160		YOLO CO. CENTRAL LANDFILL @ 44090 COUNTY RD. 28H,		CHMIRS
UNINCORPORATED COUN	S107454159		YOLO CO LAND FILL, 44090 COUNTY ROAD 28H		CHMIRS
UNINCORPORATED COUN	S105674729		RD 96 BETWEEN 29 AND 30		CHMIRS
UNIV DAVIS	S105639636		RM 3329 MEYER HALL		CHMIRS
UNKNOWN	92296201	NB I-5 AT C.O. 117	NB I-5 AT C.O. 117		ERNS
UNKNOWN	94367366	SB I-5, MP 10.6	SB I-5, MP 10.6		ERNS
UNKNOWN	93357094	EB I-80 AT WESTEND OF YOLO CAUSEWAY	EB I-80 AT WESTEND OF YOLO CAUSEWAY		ERNS
W SACRAMENTO	8874729	EXXON STN	EXXON STN		ERNS
W SACRAMENTO	8873591	FORSYTHE MARBLE	FORSYTHE MARBLE		ERNS
W. SACREMENTO	96506927	TRUCK LOADING SYSTEM / OVERPRESSUE OF SYSTEM	TRUCK LOADING SYSTEM / OVERPRESSUE OF SYSTEM		ERNS
W. SACRAMENTO	90167385	M.P. 83 / SOUTHERN PACIFIC	M.P. 83 / SOUTHERN PACIFIC		ERNS
W. SACRAMENTO	8722097	DEEPWATER CHANNEL OFF: JEFFERSON BLVD.	DEEPWATER CHANNEL OFF: JEFFERSON BLVD.		ERNS
W. SACRAMENTO	S108403967		MILE POST 87.8		CHMIRS
W. SACRAMENTO	8722190	PORT:SACRAMENTO/VESSEL:"PRES.CLEVELAND"	PORT:SACRAMENTO/VESSEL:"PRES.CLEVELAND"		ERNS
WEST SAC	S105636776		E/B 50 AT HARBOR BLVD		CHMIRS
WEST SAC	S105642578		DUMPSTER 1307 TERMINAL ST		CHMIRS
WEST SAC	S105644483		UNOCAL 3961 CHANNEL DRIVE		CHMIRS
WEST SACRAMENTO	S105636148		WB -80 EAST ON 50 INTERSECTION		CHMIRS
WEST SACRAMENTO	2004060522		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2004021089		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	97040903		W 4200 CAPITAL		HMIRS
WEST SACRAMENTO	2003125223		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2003124091		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2003133985		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2003133978		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2003132177		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2003131213		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	2003126626		AT 4200 WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	S105677432		HWY 50 AT I-80 EAST BOUND		CHMIRS
WEST SACRAMENTO	S105668008		HWY 50 WB JSO JEFFERSON ON RAMP		CHMIRS
WEST SACRAMENTO	S108402426		W/B 80 AT W. CAPITOL		CHMIRS
WEST SACRAMENTO	S105678001		WB 80 AT REED AVE		CHMIRS
WEST SACRAMENTO	S105658237		EB 80 @ ENTERPRISE BLVD		CHMIRS
WEST SACRAMENTO	90158793	M.P. 83 ON THE SOUTHERN PACIFIC RAILROAD	M.P. 83 ON THE SOUTHERN PACIFIC RAILROAD		ERNS
WEST SACRAMENTO	S106393348		AT A CONSTRUCTION SITE, .75 MI NORTH OF MARSHALL		CHMIRS
WEST SACRAMENTO	2000529223	ALONG RAIL RIGHT-OF-WAY	ALONG RAIL RIGHT-OF-WAY	0	ERNS
WEST SACRAMENTO	S105885512		3RD AND D STREET		CHMIRS
WEST SACRAMENTO	S105670156		BANK OF AMERICA, 3270 INDUSTRIAL BLVD.		CHMIRS
WEST SACRAMENTO	S106398364		N. BEACH AVE. AT GATEWAY DR.		CHMIRS
WEST SACRAMENTO	S105637521		BERTHS 6 / 7		CHMIRS
WEST SACRAMENTO	S100221499		2100 BLOCK OF ENTERPRISE BLVD.		CHMIRS
WEST SACRAMENTO	91215316	2000 BLOCKS OF ENTERPRISE AVE	2000 BLOCKS OF ENTERPRISE AVE		ERNS
WEST SACRAMENTO	S106230583	PG&E GAS DEHYDRATOR STATION, WINCHESTER LAKE	BORROWS RD		SLIC
WEST SACRAMENTO	S105672821		E. BOUND 80 AT REED OFF RAMP		CHMIRS
WEST SACRAMENTO	S105635172		WEST BOUND 50 JUST WEST OF I-80 OVER CROSSING		CHMIRS

YOLO COUNTY, CA - ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WEST SACRAMENTO	S106486461	GRAIWER PROPERTY	BOUNDED BY 'E' / 'F' STREETS		SLIC
WEST SACRAMENTO	S106483694	PG&E WINCHESTER LAKE	BURROWS ROAD		SLIC
WEST SACRAMENTO	S105661000		BUS I-80 1/4 MILE WEST OF HARBOR BLVD ON/OFF-RAMP		CHMIRS
WEST SACRAMENTO	97120896		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	97110744		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	97090157		4200 N CAPITAL		HMIRS
WEST SACRAMENTO	97090156		4200 CAPITAL		HMIRS
WEST SACRAMENTO	97080539		4200 CAPITAL		HMIRS
WEST SACRAMENTO	97070613		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	97050383		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	97040904		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	97040901		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	97020692		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	96110867		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	96100279		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	96090978		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	96090977		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	95110283		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	95020749		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	94120739		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	94120738		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	94120737		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	94030393		W CAPITAL BLVD		HMIRS
WEST SACRAMENTO	93341685	4200 WEST CAPITAL	4200 WEST CAPITAL		ERNS
WEST SACRAMENTO	S105629918		4200 WEST CAPITAL		CHMIRS
WEST SACRAMENTO	S105629878		4200 W. CAPITAL BLVD		CHMIRS
WEST SACRAMENTO	S105642315		4200 W. CAPITAL (ON ROADWAY LOADING DOCK)		CHMIRS
WEST SACRAMENTO	9999100584		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9999081610		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9999081004		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	9999050220		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9999050216		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998121020		14200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998121017		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998110888		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998110876		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998101452		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998101299		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	9998101298		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998091347		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998091346		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998091341		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9998080134		WEST CAPITAL		HMIRS
WEST SACRAMENTO	9998060520		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	9998060519		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	9900013766		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9900010710		4200 W CAPITAL		HMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WEST SACRAMENTO	9900010138		4200 WEST CAPITAL		HMIRS
WEST SACRAMENTO	9900004214		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9900004209		4200 W CAPITAL		HMIRS
WEST SACRAMENTO	9508037038		4200 WEST CAPITAL BLVD		HMIRS
WEST SACRAMENTO	9508037037		4200 WEST CAPITAL BLVD		HMIRS
WEST SACRAMENTO	2000524722	WEST CAPITAL AVE	WEST CAPITAL AVE	0	ERNS
WEST SACRAMENTO	2005709002	WEST CAPITOL AVE	WEST CAPITOL AVE		HMIRS
WEST SACRAMENTO	2005712963	WEST CAPITOL AVE	WEST CAPITOL AVE		HMIRS
WEST SACRAMENTO	98010367		W CAPITOL AVE		HMIRS
WEST SACRAMENTO	97121287		W CAPITOL		HMIRS
WEST SACRAMENTO	97121278		W CAPITOL AVE		HMIRS
WEST SACRAMENTO	97120525		W CAPITOL		HMIRS
WEST SACRAMENTO	97101629		CAPITOL		HMIRS
WEST SACRAMENTO	97101628		CAPITOL		HMIRS
WEST SACRAMENTO	97101627		CAPITOL		HMIRS
WEST SACRAMENTO	97101626		CAPITOL		HMIRS
WEST SACRAMENTO	97071023		CAPITOL AVE		HMIRS
WEST SACRAMENTO	97071020		CAPITOL AVE		HMIRS
WEST SACRAMENTO	97070996		CAPITOL AVE		HMIRS
WEST SACRAMENTO	97070638		CAPITOL AVE		HMIRS
WEST SACRAMENTO	95070898		W CAPITOL		HMIRS
WEST SACRAMENTO	95070897		W CAPITOL		HMIRS
WEST SACRAMENTO	95060616		W CAPITOL STREET		HMIRS
WEST SACRAMENTO	94060624		W CAPITOL		HMIRS
WEST SACRAMENTO	93010374		CAPITOL		HMIRS
WEST SACRAMENTO	92030771		43200 W CAPITOL AVE		HMIRS
WEST SACRAMENTO	90040758		W CAPITOL		HMIRS
WEST SACRAMENTO	2005708785	WEST CAPITOL AVE	WEST CAPITOL AVE		HMIRS
WEST SACRAMENTO	S105630240		4200 WEST CAPITOL ROADWAY EXPRESS BLDG		CHMIRS
WEST SACRAMENTO	S105643891		4200 WEST CAPITOL ROADWAY EXPRESS		CHMIRS
WEST SACRAMENTO	9998070261		42 W CAPITOL		HMIRS
WEST SACRAMENTO	9998060478		WEST CAPITOL AVE		HMIRS
WEST SACRAMENTO	9998060470		WEST CAPITOL AVE		HMIRS
WEST SACRAMENTO	9998041207		WEST CAPITOL		HMIRS
WEST SACRAMENTO	9998041206		W CAPITOL		HMIRS
WEST SACRAMENTO	9998041190		WEST CAPITOL		HMIRS
WEST SACRAMENTO	9998040384		W CAPITOL		HMIRS
WEST SACRAMENTO	9998040383		W CAPITOL		HMIRS
WEST SACRAMENTO	9998040366		W CAPITOL		HMIRS
WEST SACRAMENTO	9998040349		WEST CAPITOL		HMIRS
WEST SACRAMENTO	9998040323		WEST CAPITOL		HMIRS
WEST SACRAMENTO	9998030168		W CAPITOL		HMIRS
WEST SACRAMENTO	9998020931		WEST CAPITOL AVENUE		HMIRS
WEST SACRAMENTO	9998091333		4200 W CAPTOL		HMIRS
WEST SACRAMENTO	S105644285		3961 CHANNEL DRIVE UNOCAL PLANT		CHMIRS
WEST SACRAMENTO	S105643083		3961 CHANNEL DRIVE UNOCAL PLANT		CHMIRS
WEST SACRAMENTO	S108404415		1433 COLUMBUS AVE.		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WEST SACRAMENTO	S106390884		COSWAY ABOUT 5 MI. SOUTH OF HWY. 80 PIPELINE STATI		CHMIRS
WEST SACRAMENTO	S108418419	AGRIVENTURE 1341 PROPERTY	COUNTY ROAD 124		SLIC
WEST SACRAMENTO	S106393182		DEEP WATER OF CHANNEL SACRAMENTO RIVER, END OF WES		CHMIRS
WEST SACRAMENTO	S108400957		DEEP WATER CHANNEL > SACRAMENTO RIVER		CHMIRS
WEST SACRAMENTO	S108403297		EMBARCADERO DR NO ADDRESS AVAILABLE		CHMIRS
WEST SACRAMENTO	S108432636	NEW CINGULAR WIRELESS PCS, LLC	EAST END TOWER COURT		EMI
WEST SACRAMENTO	S105671399		811 ENTERPRISE		CHMIRS
WEST SACRAMENTO	871420	ENTERPRISE BLVD	ENTERPRISE BLVD		ERNS
WEST SACRAMENTO	2005708590	900 EST	900 EST		HMIRS
WEST SACRAMENTO	S106230584	GRAIWER PROPERTY	E, F, 7TH / 8TH STS (BOUNDED BY)		SLIC
WEST SACRAMENTO	S105660090		600 FEET WEST OF COUNTY ROADS 126 AND 124		CHMIRS
WEST SACRAMENTO	S106800636	LOWER NORTHWEST INTERCEPTOR	1550 HARBOR BLVD 212		CA WDS
WEST SACRAMENTO	S105677355		HARBOR BLVD., @PORT OF SACRAMENTO		CHMIRS
WEST SACRAMENTO	S105670988		HARBOR AT INDUSTRIAL		CHMIRS
WEST SACRAMENTO	S105669765		HARBOR BLVD AT RICE		CHMIRS
WEST SACRAMENTO	S105665674		HARBOR AND RICE AVE.		CHMIRS
WEST SACRAMENTO	S108401706		HIGGINS AT LINDEN		CHMIRS
WEST SACRAMENTO	S108406764		WB HWY 50 ON HARBOR OFF-RAMP		CHMIRS
WEST SACRAMENTO	91218664	E/B I-80 AT BASE OF BRYTE BEND BRIDGE	E/B I-80 AT BASE OF BRYTE BEND BRIDGE		ERNS
WEST SACRAMENTO	S106394841		INDUSTRIAL BLVD. AT THE PORT OF SACRAMENTO, WITH A		CHMIRS
WEST SACRAMENTO	S105890295		INTERSECT. W CAP / HARBOR BLVD. & W CAP & HOUSTO		CHMIRS
WEST SACRAMENTO	S105637304		INTERSECTION OF HARBOUR BLVE AND HALYARD DRIVE		CHMIRS
WEST SACRAMENTO	S106484101	JEFFERSON BLVD. GASOLINE SPILL	JEFFERSON BLVD		SLIC
WEST SACRAMENTO	S105670927		1552 JEFFERSON BLVD AT 7-11 STORE		CHMIRS
WEST SACRAMENTO	S107453985		W. JEFFERSON AT THE DEEP WATER SHIP CANAL		CHMIRS
WEST SACRAMENTO	S105631008		JEFFERSON/ INDUSTRY (WEST SAC PORT)		CHMIRS
WEST SACRAMENTO	S108403532		LAKE WASHINGTON NORTH OF SOUTH PORT PARKWAY AT THE		CHMIRS
WEST SACRAMENTO	96480135	LOOSE FLANGE GASKET ON CONVERTOR HEAD OF VESSEL #D-604	LOOSE FLANGE GASKET ON CONVERTOR HEAD OF VESSEL #D-604		ERNS
WEST SACRAMENTO	S105671727		MARILYN AVE AT STONE BLVD		CHMIRS
WEST SACRAMENTO	S100279828		2505 MARSHAL STREET		CHMIRS
WEST SACRAMENTO	S107448211		1000 OF MARSTON		CHMIRS
WEST SACRAMENTO	S106400286		MILE POST 88.4, MARTINEZ SUBDIVISION		CHMIRS
WEST SACRAMENTO	S105663674		MILE POST 87, MARTINEZ SUBDIVISION		CHMIRS
WEST SACRAMENTO	S106398503		MPM 86 MARTINEZ SUBDIVISION		CHMIRS
WEST SACRAMENTO	S107452773		MPM 88.7 MARTINEZ SUB		CHMIRS
WEST SACRAMENTO	S106400151		NEAR MPM 6.0 ON THE HOLLAND INDUSTRIAL LEAD		CHMIRS
WEST SACRAMENTO	S108403376		OAK AT ELM		CHMIRS
WEST SACRAMENTO	S100219613		OFF RAMP W BOUND I-80/RISKE RD		CHMIRS
WEST SACRAMENTO	90167229	I-80 ON RAMP AT ENTERPRISE AND LAKE BLVD	I-80 ON RAMP AT ENTERPRISE AND LAKE BLVD		ERNS
WEST SACRAMENTO	2007406944	1020 PARKWAY BLVD	1020 PARKWAY BLVD		HMIRS
WEST SACRAMENTO	S105643915		1820 PARKWAY BLVD VIKING FEIGHT LINES		CHMIRS
WEST SACRAMENTO	2004101045		1820 S PARKWAY		HMIRS
WEST SACRAMENTO	S105885239		POPLAR AND MEDRONE		CHMIRS
WEST SACRAMENTO	S108400998		PORT OF SACRAMENTO, DEEP WATER CHANNEL		CHMIRS
WEST SACRAMENTO	S105638809		PORT OF SACRAMENTO. FAR EASTERN BERTH		CHMIRS
WEST SACRAMENTO	90189471	PORT LEAD	PORT LEAD		ERNS

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WEST SACRAMENTO	S105670907		US POST OFFICE, 3775 INDUSTRIAL BLVD.		CHMIRS
WEST SACRAMENTO	96472888	PROCESS FLANGE/FLANGE LEAKING	PROCESS FLANGE/FLANGE LEAKING		ERNS
WEST SACRAMENTO	90167238	RAILROAD M.P. 85/W. OF WEST SACRAMENTO	RAILROAD M.P. 85/W. OF WEST SACRAMENTO		ERNS
WEST SACRAMENTO	S106393823		RAILROAD RIGHT OF WAY// THOMAS GUIDE PAGE 276 D #3		CHMIRS
WEST SACRAMENTO	S100219742		SP RAILROAD MP#83 YOLO BY PASS		CHMIRS
WEST SACRAMENTO	2007408417	1600 RALEY COURT	1600 RALEY COURT		HMIRS
WEST SACRAMENTO	S106104562	CRUM & CRUM ENT	2935 RAMCO ST STE 20		CA WDS
WEST SACRAMENTO	90190791	CO RD 126 1/4 MI W OF OLD RIVER RD	CO RD 126 1/4 MI W OF OLD RIVER RD		ERNS
WEST SACRAMENTO	S108406747		854 RISKY LANE RAILYARD		CHMIRS
WEST SACRAMENTO	S106230598	VOPAK USA INC. (FORMER VAN WATERS & ROGERS INC.)	850 RIVER RD S / 400 BALLPARK DR		SLIC
WEST SACRAMENTO	S108405939		S RIVER RD AT GREGORY		CHMIRS
WEST SACRAMENTO	S108404890		RIVER POINT CIRCLE		CHMIRS
WEST SACRAMENTO	S105656673		S RIVER RD 1/4 MILE NORTH OF LINDEN RD		CHMIRS
WEST SACRAMENTO	S105653763		SOUTH RIVER ROAD AT DAVIS RD		CHMIRS
WEST SACRAMENTO	S105669743		805 RIVER PT.		CHMIRS
WEST SACRAMENTO	S105643446		4275 SOUTH RIVER RD (4 SEASONS MARINA)		CHMIRS
WEST SACRAMENTO	S105665432		S RIVER ER @ EAST BOUND 50		CHMIRS
WEST SACRAMENTO	S105660788		5101 SOUTH RIVERSIDE		CHMIRS
WEST SACRAMENTO	S106248607	JACKSON LABORATORY	960 RIVERSIDE PRKWY, SUITE 10	0	EMI
WEST SACRAMENTO	S105635602		ROADWAY TERMINAL 4200 WEST CAPITOL		CHMIRS
WEST SACRAMENTO	87463655	RYDER TRUCK RENTAL(PETERSON)	RYDER TRUCK RENTAL(PETERSON)		ERNS
WEST SACRAMENTO	S106400125		WEST SACRAMENTO @ HARBOR BLVD / INDUSTRIAL BLVD.		CHMIRS
WEST SACRAMENTO	98461728	SACRAMENTO RIVER NEAR DAVIS AND SOUT RIVER ROADS	SACRAMENTO RIVER NEAR DAVIS AND SOUT RIVER ROADS		ERNS
WEST SACRAMENTO	S108404063		WEST SACRAMENTO IN UP RAIL YARD		CHMIRS
WEST SACRAMENTO	S105556828	CAPITAL PLATING FACILITY (FORMER)**	WEST SACRAMENTO		SLIC
WEST SACRAMENTO	S105629495		SACRAMENTO STATION 1570 SOUTH RIVER ROAD		CHMIRS
WEST SACRAMENTO	S105668965		SACRAMENTO DEEP WATER CHANNEL		CHMIRS
WEST SACRAMENTO	S107454099		WEST SACRAMENTO RAIL YARD / 851 RISKE LN.		CHMIRS
WEST SACRAMENTO	S106398839		WEST SACRAMENTO, AT THE 3RD STREET CROSSING NEAR D		CHMIRS
WEST SACRAMENTO	S106398765		SAIA MOTOR FREIGHT, 1745 CEBRIA ST		CHMIRS
WEST SACRAMENTO	S105630655		4 SEASONS MARINA,		CHMIRS
WEST SACRAMENTO	96472715	SHEEN SIZE: 40FT X ?	SHEEN SIZE: 40FT X ?		ERNS
WEST SACRAMENTO	S105642450		1080 SHORE BLVD		CHMIRS
WEST SACRAMENTO	2003643539	319 SIXTH STREET	319 SIXTH STREET		ERNS
WEST SACRAMENTO	2004090281		900 E ST (TERM)		HMIRS
WEST SACRAMENTO	2005020454		E STREET		HMIRS
WEST SACRAMENTO	2005020453		E STREET		HMIRS
WEST SACRAMENTO	S105670362		I STREET BRIDGE AT THE RAILROAD TRACKS		CHMIRS
WEST SACRAMENTO	S105658667		I STREET BRIDGE		CHMIRS
WEST SACRAMENTO	S105883251		ON THE RR TRACKS, BEHIND THE 6TH STREET MARKET		CHMIRS
WEST SACRAMENTO	S105882193		ON THE MIKON SIDING		CHMIRS
WEST SACRAMENTO	S105657794		THE PORT OF SACRAMENTO DOCK		CHMIRS
WEST SACRAMENTO	S104587019	FORMER VAN WATERS&ROGERS/RALEY	THIRD ST		CA WDS
WEST SACRAMENTO	S106483700	CAPITAL PLATING FACILITY	UNKNOWN		SLIC
WEST SACRAMENTO	S100280057		UNKNOWN		CHMIRS

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WEST SACRAMENTO	S105645087		UNOCAL AGRICULTURAL PLANT 3961 CHANNEL DRIVE		CHMIRS
WEST SACRAMENTO	S106717856	KMEP YOLO BYPASS PETROLEUM PIPELINE RELEASE	UPRR MILE POST MARKER 85.2		SLIC
WEST SACRAMENTO	S106230605	KINDER MORGAN ENERGY PARTNERS, YOLO BYPAS SPILL (	UPRR MILE POST MARKER 85.0, MARTINEZ SUBDIVISION		SLIC
WEST SACRAMENTO	8874370	VAL-HALLA MOBIL HOME PARK	VAL-HALLA MOBIL HOME PARK		ERNS
WEST SACRAMENTO	S107453948		VALLEY SLURRY SEAL, POSSIBLY ON CHANNEL DR.		CHMIRS
WEST SACRAMENTO	99640077	600 FT W OF COUNTY RD 126 AND 124	600 FT W OF COUNTY RD 126 AND 124		ERNS
WEST SACRAMENTO	S105653250		I-80 W/B AT W. CAPITOL AVE		CHMIRS
WEST SACRAMENTO	S108401479		WASHINGTON AVE AND MANZANITA WAY		CHMIRS
WEST SACRAMENTO	S105671619		WESTERN PARCEL EXPRESS 1740 ENTERPRISE BLVD		CHMIRS
WEST SACRAMENTO	S102800019	ARMY CORPS OF ENGINEERS	WILLIAM G STONE NAVIGATION	00000	HAZNET
WEST SACRAMENTO	S105645885		1309 WINWARD STREET		CHMIRS
WEST SACREMENTO	90186585	ON THE DOCK OF THE ROADWAY EXPRESS FACILITY 4200 W. CAPITAL	ON THE DOCK OF THE ROADWAY EXPRESS FACILITY 4200 W. CAPITAL		ERNS
WEST SACTO	S106389543		SACTO TURN BASIN BETWEEN LIGHTS 83 AND 85 IN SAC		CHMIRS
WINTERS	S105671968		HWY 128 W/O WINTERS, MPM 2.61		CHMIRS
WINTERS	S106103580	WINTERS GAS PIPELINE INTERTIE	27700 COUNTRY RD 29		CA WDS
WINTERS	S106103579	JAMES ENGLISH	29195 COUNTRY RD 28		CA WDS
WINTERS	A100110465	WINTERS METER STATION	COUNTY ROAD 32		AST
WINTERS	S105256627	WINTERS WWTF	501 COUNTY ROAD 32A		CA WDS
WINTERS	S106249033	R.H. DYCK, INC.	4863 JAYBEE LANE	0	EMI
WINTERS	S105675071		1 MILE WEST OF 92 EAST, BACK ROAD.		CHMIRS
WINTERS	S106835863	MONIER INCORPORATED	1/2 MI N OF HWY 128 ON CR 90	0	EMI
WINTERS	A100176529	PLEASANT CREEK UGS	N. OF CTY RD. 32A, 3 MI NW OF		AST
WINTERS	S106104566	WINTERS AGGREGATES	4499 PUTAH CREEK RD		CA WDS
WINTERS	S105675573		PUTAH CREEK RD WEST OF CANAL		CHMIRS
WINTERS	1006823245	PUTAH CREEK AUTO BODY	4530 A-2 PUTAH CREEK RD.	0	EMI
WINTERS	8714222	REDWOOD ROYAL HOMETEL	REDWOOD ROYAL HOMETEL		ERNS
WINTERS	A100110464	WINTERS FIELD STATION	STEVENSON BRIDGE RD.		AST
WOODLAND	S108086747	METRO AUTO DISMANTLING	19389 CR 102		SLIC
WOODLAND	S106837025	PACIFIC GAS & ELECTRIC/PG&E	CR 103 N OF RD 27	0	EMI
WOODLAND	S100280433		HIGHWAY 113 ON HIGHWAY I-5		CHMIRS
WOODLAND	S106230588	AGRIFORM SUPPLY COMPANY	HIGHWAY 113 / ROAD 18C		SLIC
WOODLAND	U003790390	PACIFIC INTERNATIONAL	HIGHWAY 113, 17465		UST
WOODLAND	S106247947	ADAMS GRAIN CO.	HIGHWAY 16 / CR 102	0	EMI
WOODLAND	U003876573	TEICHERT AGGREGATES - WOODLAND	35030 CR 20	0	UST, EMI
WOODLAND	S100220511		CR 24 RT 1 BOX #885		CHMIRS
WOODLAND	S106104558	CACHE CREEK DAIRY	RD 26		CA WDS
WOODLAND	S105939912	TEICHERT AGGREGATES	CR 29/HWY 113	0	EMI
WOODLAND	S107453759		SR 45 JUST SOUTH OF COUNTY ROAD 95B		CHMIRS
WOODLAND	S108406029		SB 5 JSO CR 102		CHMIRS
WOODLAND	S105677722		NB 5 AND WEST STREET		CHMIRS
WOODLAND	S107453528		SB 5 NORTH OF CO RD 102		CHMIRS
WOODLAND	S100280446		18225 CR 97		CHMIRS
WOODLAND	2003708941	26 AND 38 HARDER RD/ LEFT SIDE OF ST	26 AND 38 HARDER RD/ LEFT SIDE OF ST		ERNS
WOODLAND	2002599969	ARCO FACILITY #5466	ARCO FACILITY #5466	0	ERNS

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WOODLAND	S108402502		SB113 AT GIBSON RD		CHMIRS
WOODLAND	S105657777		CR102 AT BEAMER		CHMIRS
WOODLAND	S106486787	ROY RIEGELS CHEMICALS	7185 EAST BEAMER STREET		SLIC
WOODLAND	S106393097		BEGAN SPILLING AT KENTUCKY AVE AND EAST ST EASTWAR		CHMIRS
WOODLAND	S106920885	GRAYMONT WESTERN U.S., INC	30407 BEST RANCH RD	0	EMI
WOODLAND	S105668168		BRANIGAN ST. AT PIONEER AVE.		CHMIRS
WOODLAND	2006817809	317 CLEVELAND STREET COTTAGE 317	317 CLEVELAND STREET COTTAGE 317		ERNS
WOODLAND	92256898	CNTY ROAD 18C	CNTY ROAD 18C		ERNS
WOODLAND	S103952109	BC STOCKINGS	COR PIONEER RD / EAST BEAMER ST	00000	HAZNET
WOODLAND	S106484152	JOE HEIDRICK ENTERPRISES - CONAWAY YARD	CORNER OF COUNTY ROADS 27 / 103		SLIC
WOODLAND	S105882351		CORNER OF 4TH AND MARSHALL		CHMIRS
WOODLAND	S103678500	JOHN GALICIA TRUCKING	CORNER OF RD 101 / BEAMER ST	00000	HAZNET
WOODLAND	S103678461	PG & E NATURAL GAS PIPELINE	CORNER COUNTY RD 101 / BEAMER	00000	HAZNET
WOODLAND	S105027468	SEWAGE TRT FACILITY	COUNTY RD 24		Cortese
WOODLAND	94397538	COUNTY ROAD 102 AND ROAD 18C	COUNTY ROAD 102 AND ROAD 18C		ERNS
WOODLAND	2006798344	COUNTY RD 22	COUNTY RD 22		ERNS
WOODLAND	S108403959		COUNTY RD 97		CHMIRS
WOODLAND	A100108079	CONWAY RANCH DEHYDRATOR	COUNTY RD. 103		AST
WOODLAND	S106104545	WOODLAND WWTP STORM WATER	42929 COUNTY ROAD 24 RD		CA WDS
WOODLAND	92259019	COUNTY RD & MAIN	COUNTY RD & MAIN		ERNS
WOODLAND	91217657	COUNTY ROAD 98	COUNTY ROAD 98		ERNS
WOODLAND	S106827729	CAL/WEST SEEDS	COUNTY ROAD 22 / COUNTY RD 102	0	EMI
WOODLAND	S106839463	SISKIYOU FOREST PRODUCTS	22 NORTH CR 101	0	EMI
WOODLAND	S105659639		NB CR102 AT CR16		CHMIRS
WOODLAND	S105636682		CRAIN INDUSTRIES, 1465 TANFORAN ST		CHMIRS
WOODLAND	S106826361	AT&T WIRELESS- WOODLAND	824 N. EAST ST	0	EMI
WOODLAND	S105937229	CITY OF WOODLAND	W. EL DORADO/CR 98 - WELL #17	0	EMI
WOODLAND	S106399466		ELLIOT ST. BETWEEN CALIFORNIA AND WEST ST.		CHMIRS
WOODLAND	S106398520		214 ELM ST. # 2		CHMIRS
WOODLAND	S107451634		E END OF E. BEAMER ST.		CHMIRS
WOODLAND	S107451879		GARFIELD DR. AT MATMAR RD.		CHMIRS
WOODLAND	S105882431		GIBSON RD. IN FRONT OF THE ANIMAL SHELTER		CHMIRS
WOODLAND	S105630018		GUM STREET AT E STREET		CHMIRS
WOODLAND	S106396638		NB I-5 OFFRAMP TO WEST ST.		CHMIRS
WOODLAND	S106390454		S/B I-5 MILE MARKER 26.3 AT DUNNIGAN REST AREA, 16		CHMIRS
WOODLAND	S108402954		SB I-5 1/2 MILE SOUTH OF COUNTY ROAD 102		CHMIRS
WOODLAND	S105083375	MCKEE FOOD CORPORATION	SB I-5 / WEST ST (ON ON RAMP)	00000	HAZNET
WOODLAND	S105664811		SB I5, AT SR 113		CHMIRS
WOODLAND	S108401071		INTERSECTION OF GRANADA AND 2ND ST.		CHMIRS
WOODLAND	S105886801		76 B J WAY		CHMIRS
WOODLAND	S105644829		LEISURVILLE MOBIL HOME PARK		CHMIRS
WOODLAND	S105256628	PACIFIC COAST PRODUCERS	7916 LEMON AVE		CA WDS
WOODLAND	S100279779		LEVEE - END OF CR 14-A WEST		CHMIRS
WOODLAND	S105885375		MAIN ST EAST OF COUNTY RD 103		CHMIRS
WOODLAND	S108404508		EAST MAIN ST		CHMIRS
WOODLAND	S105655709		367 WEST MAIN STREET - RALEYS STORE		CHMIRS
WOODLAND	S105665297		183 WEST MAIN ST. NORCAL PETROLEUM COMPANY		CHMIRS

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WOODLAND	S106827728	CAL/WEST SEEDS	41910 E. MAIN STREET	0	EMI
WOODLAND	S105939250	RALPH HAYES & SON, INC.	41740 EAST MAIN STREET	0	EMI
WOODLAND	S105937230	CITY OF WOODLAND	2395 E MAIN ST/CR 103 - WELL#3	0	EMI
WOODLAND	S102801786	PGE	MATMOR / CANNERY ROAD	00000	HAZNET
WOODLAND	99627450	.5 MI E OF 20505 CNTY RD 93	.5 MI E OF 20505 CNTY RD 93		ERNS
WOODLAND	93468106	I-5/.5 MI NORTH OF ROAD 102	I-5/.5 MI NORTH OF ROAD 102		ERNS
WOODLAND	93331073	I-5/.5 MI NORTH OF ROAD 102	I-5/.5 MI NORTH OF ROAD 102		ERNS
WOODLAND	S105661181		1/2 MILE EAST OF 20505 CR193		CHMIRS
WOODLAND	S108404020		PALM AND KENTUCKY AT EAST		CHMIRS
WOODLAND	S108404998		PIONEER AND CHURCHILL		CHMIRS
WOODLAND	S107453001		NORTH PIONEER AT CHURCHILL DOWNS		CHMIRS
WOODLAND	S106396651		718 PRANCER DR.		CHMIRS
WOODLAND	S108403703		PURDUE AT NOTRE DAME		CHMIRS
WOODLAND	S100216493		RAILROAD XING @ NORTH ST. / EAST ST.		CHMIRS
WOODLAND	S106395872		22227 CO RD 100A		CHMIRS
WOODLAND	S106104555	ENVIRONMENTAL RECLAIMING SOLUT	11220 CO RD 94		CA WDS
WOODLAND	92256650	CO RD 102, 1/2 MI S OF CO RD 125	CO RD 102, 1/2 MI S OF CO RD 125		ERNS
WOODLAND	91236861	CO RD 17 & 103	CO RD 17 & 103		ERNS
WOODLAND	S102008109	WOODLAND PLANT	CO. RD 20		CA WDS
WOODLAND	2002595573	CO RD 102 & RD 27	CO RD 102 & RD 27	0	ERNS
WOODLAND	S108431800	ENTRAVISION RADIO	19245 ROAD 102		EMI
WOODLAND	S106230604	JOE HEIDRICK ENTERPRISES - MAINTENANCE YARD** SOM	18284 ROAD 97		SLIC
WOODLAND	S106230599	YOLO COUNTY INTERNATIONAL AIRPORT (WOODLAND AIRPOR	ROAD 24, 510 ACRES		SLIC
WOODLAND	S106840592	TEICHRT AGGREGATES-REIFF ROCK	ROAD 19A, 1MI E OF ROAD 87	0	EMI
WOODLAND	S105937945	CONTINENTAL LIME, INC.	CO. ROAD 18A / CA NO. RAILROAD	0	EMI
WOODLAND	S105886867		WEST SIDE OF ROAD 95, NORTH OF ROAD 12		CHMIRS
WOODLAND	S106396514		STATE HWY 113 NORTH OF CHURCHILL'S DOWN		CHMIRS
WOODLAND	S105630437		STATE RT 16 EAST OF CO RD 93		CHMIRS
WOODLAND	8874319	TEISCHERT CO HWY 13	TEISCHERT CO HWY 13		ERNS
WOODLAND	S106394738		ON THE E END OF ROAD 16 AT OLD SACRAMENTO RIVER ON		CHMIRS
WOODLAND	S105629326		BP TRUCK STOP CORNER OF MAIN / ROAD 101		CHMIRS
WOODLAND	S105632282		UNOCAL STATION #164 208 MAIN STREET		CHMIRS
WOODLAND	S105670905		VALLEY MEDIA, 260 NORTH PIONEER		CHMIRS
WOODLAND	S107150201	YOLO COUNTY/CLANDESTINE DRUG LABS ONLY	VARIOUS LOCATIONS WITHIN YOLO		HAZNET
WOODLAND	S103680171	YOLO COUNTY/CLANDESTINE DRUG LABS ONLY	VARIOUS LOCATIONS WITHIN YOLO COUNTY	00000	HAZNET
WOODLAND	S106828759	CITY OF WOODLAND	VARIOUS	0	EMI
WOODLAND	S104568311	ARDEN REALTY INC	21021 VENTURA BLVD	00000	HAZNET
WOODLAND	S105884924		WILLOW WAY WITH CROSS STREET OF WEST SOUTHWOOD		CHMIRS
WOODLAND	S108405322		803 WINDEL		CHMIRS
WOODLAND	S108403410		WOODLAND COMMUNITY COLLEGE, 41605 GIBSON ROAD		CHMIRS
WOODLAND	99648560	200 YARDS WEST OF HWY 5 ON OLD RIVER ROAD	200 YARDS WEST OF HWY 5 ON OLD RIVER ROAD		ERNS
WOODLAND	S105643561		YOLO CO PUBLIC WORKS 292 WEST BEAMER		CHMIRS
WOODLAND	S103680264	COMPOSSITE MATERIALS INC	YOLO LANDFILL RD 102/HWY 28	00000	HAZNET
WOODLAND	S106841986	VALLEY BY-PRODUCTS, INC.	YOLO COUNTY LANDFILL	0	EMI
WOODLAND (NR)	91205674	CO RD 22 APPROX 1/2 EAST OF CO RD 103	CO RD 22 APPROX 1/2 EAST OF CO RD 103		ERNS

YOLO COUNTY, CA - ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WOODLAND (NR)	90167438	CO. RD. 25 BETWEEN CO. RD. 97 AND 95	CO. RD. 25 BETWEEN CO. RD. 97 AND 95		ERNS
YOLO	S103635480	MORTON RUDE	17000 COUNTY RD 52	00000	HAZNET
YOLO	S106400419		1/2 MILE NORTH OF COUNTY RD. 17		CHMIRS
YOLO COUNTY	S105630999		SR 16 @ RD 99		CHMIRS
YOLO COUNTY	91218745	HWY 45, NORTH OF KNIGHTS LANDING **	HWY 45, NORTH OF KNIGHTS LANDING **		ERNS
YOLO COUNTY	S105631508		S# 5731 805 RIVER POINT CIR.		CHMIRS
YOLO COUNTY	91234903	M.P. 95.2 BETWEEN WOODLAND & ZAMORA	M.P. 95.2 BETWEEN WOODLAND & ZAMORA		ERNS
YOLO COUNTY	91240409	BEACON STATION CO RD & I-5	BEACON STATION CO RD & I-5		ERNS
YOLO COUNTY	2001562209	NORTH CORTLAND AND Z LINE ROAD IN	NORTH CORTLAND AND Z LINE ROAD IN	0	ERNS
YOLO COUNTY	S107538231		CREEK BED NEAR ESPARTO	0	CDL
YOLO COUNTY	S105629338		EASTBOUND I I 80, WEST END OF YOLO CAUSEWAY		CHMIRS
YOLO COUNTY	90200722	FIELD WEST OF CO RD 116	FIELD WEST OF CO RD 116		ERNS
YOLO COUNTY	S105636510		S/B I-5 MP # 10.6		CHMIRS
YOLO COUNTY	S106230590	UNION PACIFIC RAILROAD - AMTRAK SPILL, EAST OF DA	MACE BLVD / COUNTY RD 105, EAST OF DAVIS MILEPOS		SLIC
YOLO COUNTY	S107538895		I-5, NO OF DUNNIGAN AT COUNTY LINE RD	0	CDL
YOLO COUNTY	S105630939		CO RD 25A AND SOUTHAST ST WOODLAND		CHMIRS
YOLO COUNTY	S105557239	SYCAMORE RANCH IMPROVEMENTS, CDF II**	SYCAMORE RANCH		SLIC
YOLO COUNTY	S100948710	YOLO COUNTY/EMERGENCY RESPONSE ONLY	YOLO COUNTY	00000	HAZNET
ZAMORA	S105673974		INTERSTATE 5 AT ZAMORA		CHMIRS
ZAMORA	S105638670		NB I-5 AND COUNTY RD 12		CHMIRS
ZAMORA	S106397970		WEST OF ROAD 94, POINT 2.5 MILES NORTH OR ROAD A		CHMIRS
ZAMORA	S105939114	PIRMI	CO RD 13/HWY 113	0	EMI

SACRAMENTO COUNTY, CA - ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
** S. SACRAMENTO/ ELK C	90465194	MP 121/NR CAL GAS PLANT/GRANT LINE RD **	MP 121/NR CAL GAS PLANT/GRANT LINE RD **		ERNS
ANDRUS ISLAND	S106389713		SPIN DRIFT MARINA TRAILER PARK 841 BRANNAN ISLAND		CHMIRS
ANTELOPE	2002083073		E/B 1-80		HMIRS
ANTELOPE	S105883233		N. ANTELOPE RD NEAR POKER LN		CHMIRS
ANTELOPE	S106390350		CAPE HART HOUSING LAWERENCE LINKS GOLF COURSE WAT		CHMIRS
ANTELOPE	2003653408	CAR ONE SPOT	CAR ONE SPOT		ERNS
ANTELOPE	S105645084		GLENTANNA WAY EAST OF GOOSBERRY		CHMIRS
ANTELOPE	S105643411		NORTH HUMP ROAD AT ANTELOPE NORTH ROAD		CHMIRS
ANTELOPE	S105663281		NEAR ROSEVILLE ROAD / CONNIE ROAD		CHMIRS
ANTELOPE	S106447112	ANTELOPE EAST	STATIONERS WAY		CA WDS
BAY POINT	S105643042		MCAVOY YACHT HARBOR SLIP# P-65 "TAMARA SUE"		CHMIRS
CA	S104384519	VALLECITOS, SEC 5	NW 1/4 SEC 5 T17S R11E MDB / M		WMUDS/SWAT
CA	S104384518	VALLECITOS, SEC 31	SW 1/4 SE1/4 SEC 31 T16S MDB / M		WMUDS/SWAT
CARMICHAEL	S105638057		#5467 ARCO STATION AT 4101 MANZANITA AVE		CHMIRS
CARMICHAEL	S105662795		1625 ARDEN BLUFFS LANE LOT 13		CHMIRS
CARMICHAEL	S105635827		EAST END OF HEATH LIF DRIVE		CHMIRS
CARMICHAEL	S105645235		9520 FAIR OAKS BLVD - ON LARGE ONE ACRE PLUS LOT		CHMIRS
CARMICHAEL	S108404751		2508 GABRIEL AND EL CAMINO		CHMIRS
CARMICHAEL	S105662903		GARFIELD AT WINDING WAY		CHMIRS
CARMICHAEL	S105643506		3700 GARFIELD GARFIELD ELEMENTARY SCHOOL		CHMIRS
CARMICHAEL	94391518	GIVENS DR	GIVENS DR		ERNS
CARMICHAEL	91241791	INTERSECTION OF ORANGE GROVE AVE AND SYCAMORE	INTERSECTION OF ORANGE GROVE AVE AND SYCAMORE		ERNS
CARMICHAEL	S107452893		NB MANZANITA N OF WINDING WAY		CHMIRS
CARMICHAEL	S105665772		WB MARCONI JUST EAST OF EASTERN		CHMIRS
CARMICHAEL	S106392303		5634 ROBERTSON AVE. - STATION 109 - AMERICAN RIVER		CHMIRS
CARMICHEAL	91203822	FAIR OAKS BLVD AND OAK AVE	FAIR OAKS BLVD AND OAK AVE		ERNS
CITRUS	S105631463		MAIN AVE / SUNSET AVE		CHMIRS
CITRUS HEIGHT	8874417	UNION 76 STATION	UNION 76 STATION		ERNS
CITRUS HEIGHTS	S105629782		ANTELOPE AND ZENITH		CHMIRS
CITRUS HEIGHTS	2005708355	6001 AUBURN BLVD STE 100	6001 AUBURN BLVD STE 100		HMIRS
CITRUS HEIGHTS	S105643451		AUBURN BLVD AT LINDEN WAY INN FRONT OF K MART		CHMIRS
CITRUS HEIGHTS	S108405410		BEHIND 7761 GREENBACK LANE, APT 114		CHMIRS
CITRUS HEIGHTS	S105670766		BROOKCREST AVE. NEAR SPICER		CHMIRS
CITRUS HEIGHTS	S106399174		7933 BUTTERNUT		CHMIRS
CITRUS HEIGHTS	S106394689		CROSS STREETS GREENBACK LANE AND SUNRISE BLVD., AT		CHMIRS
CITRUS HEIGHTS	1009619603	5985 DEVECCHI AVE APT 312	5985 DEVECCHI AVE APT 312		US CDL
CITRUS HEIGHTS	8874104	6800 DIABLO ACROSS FROM WOOD FOREST ST.	6800 DIABLO ACROSS FROM WOOD FOREST ST.		ERNS
CITRUS HEIGHTS	S105646105		I-80 EB AT ANTELOPE SCALES		CHMIRS
CITRUS HEIGHTS	S108403180		8229 FOX FIRE DR.ARCADE CREEK		CHMIRS
CITRUS HEIGHTS	8715157	GARRYANNA DR. OUT IN THE PASTURE	GARRYANNA DR. OUT IN THE PASTURE		ERNS
CITRUS HEIGHTS	S105633561		7769 GREENBACH LANE		CHMIRS
CITRUS HEIGHTS	S105656295		7680 GREENBACK LANE - SWANSONS CLEANERS		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CITRUS HEIGHTS	S105670086		EB I-80 JUST EAST OF GREENBACK		CHMIRS
CITRUS HEIGHTS	S106400017		EB I-80 TRUCK SCALES AT ANTELOPE RD.		CHMIRS
CITRUS HEIGHTS	S106400016		EB I-80 TRUCK SCALES AT ANTELOPE RD.		CHMIRS
CITRUS HEIGHTS	S105884813		2200 KINCADE WAY		CHMIRS
CITRUS HEIGHTS	S106400583		1/4 MILE WEST OF SYLVAN RD AND STOCK RANCH RD		CHMIRS
CITRUS HEIGHTS	S105665427		OAK AVE NEAR OLIVINE AVE		CHMIRS
CITRUS HEIGHTS	1009619602	7856 OLD AUBURN BLVD APT 5	7856 OLD AUBURN BLVD APT 5		US CDL
CITRUS HEIGHTS	S105671144		EAST ON GREENBACK		CHMIRS
CITRUS HEIGHTS	S105631553		PARK OAKS / GREEN BACK		CHMIRS
CITRUS HEIGHTS	2007406306	1820 PARKWAY BLVD	1820 PARKWAY BLVD		HMIRS
CITRUS HEIGHTS	2007409571	1820 PARKWAY BLVD	1820 PARKWAY BLVD		HMIRS
CITRUS HEIGHTS	S106486364	CITRUS HEIGHTS PCE	999 RIVERSIDE AVE		SLIC
CITRUS HEIGHTS	S108403151		SAN SIMEON AT SAN PABLO DR.		CHMIRS
CITRUS HEIGHTS	S106391950		STOCK RANCH ROAD AT THE END OF SYLVAN ROAD IN A FI		CHMIRS
CITRUS HEIGHTS	S100219101		6822 SUNDALE (IN CREEK NEAR #22)		CHMIRS
CITRUS HIEGHTS	96490721	6317 WICKSFORD	6317 WICKSFORD		ERNS
COURTLAND	S104857538	BRUCE TOWNE	HIGHWAY 160		Sacramento Co. CS
COURTLAND	S102005892	COURTLAND WWTF	HWY 160		CA WDS
COURTLAND	200112595		WITTON ROAD & 160 HWY		HMIRS
DALT	2000520633	MP 63	MP 63	0	ERNS
DEL PASO HEIGHTS	S105882165		144.2 142.9 SACRAMENTO SUB DIV.		CHMIRS
DICKSON	98457238	I-80 AT DICKSON AVE	I-80 AT DICKSON AVE		ERNS
EAST SACRAMENTO	90178859	WHITE ROCK RD AT GRANT LINE	WHITE ROCK RD AT GRANT LINE		ERNS
EL GROVE	8721848	KINGSFORD CHARCOAL	KINGSFORD CHARCOAL		ERNS
ELK GROVE	S105648137		I - 5 2 MI SOUTH OF HOOD AND FRANKLIN.		CHMIRS
ELK GROVE	96493047	05/28/1996	05/28/1996		ERNS
ELK GROVE	96493045	05/28/1996	05/28/1996		ERNS
ELK GROVE	8866845	MP 122.9	MP 122.9		ERNS
ELK GROVE	88464614	MP 122.9	MP 122.9		ERNS
ELK GROVE	S108404993		MP 48.0 FRESNO SUBDIVISION		CHMIRS
ELK GROVE	S105661574		MP 55.3 ON FRESNO SUBDIVISION		CHMIRS
ELK GROVE	S105644782		SB 99 AT ESCHINGER RD		CHMIRS
ELK GROVE	S105644750		HWY 99 CLOSEST CONSUMES RIVER		CHMIRS
ELK GROVE	S105634286		AUTUMN GROVE AT MAPLEVIEW		CHMIRS
ELK GROVE	S107451158		BADER RD. AND PLEASANT GROVE SCHOOL RD		CHMIRS
ELK GROVE	S108403926		BRADSHAW AT CALVINE		CHMIRS
ELK GROVE	S108403279		ON BRADSHAW, SOUTH OF BOND ROAD		CHMIRS
ELK GROVE	S107736361	FRANKLIN AUXILIARY FIELD #6	BRUCEVILLE ROAD		ENVIROSTOR
ELK GROVE	2003649882	CALVINE ROAD	CALVINE ROAD		ERNS
ELK GROVE	S108400900		CALVINE RD		CHMIRS
ELK GROVE	S105883756		CORNER OF BADER ROAD AND SHELDON ROAD		CHMIRS
ELK GROVE	S105659462		S ELK GROVE BLVD AT RAILROAD ST		CHMIRS
ELK GROVE	S105664738		ELK GROVE FLORIN AT CALVINE		CHMIRS
ELK GROVE	S106400252		ELK GROVE RD AT FRANKLIN BLVD		CHMIRS
ELK GROVE	S107451744		ELK GROVE BLVD AT PORTO ROSA RD.		CHMIRS
ELK GROVE	S107451743		ELK GROVE BLVD AT PORTO ROSA DR.		CHMIRS
ELK GROVE	S107451742		ELK GROVE AT SCHOOL		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
ELK GROVE	S106393465		FRESNO SUBDIVISION, MPM 55.5 UNDER HWY 99 OVERPASS		CHMIRS
ELK GROVE	S105677710		GRANT LINE RD. AT WATERMAN RD.		CHMIRS
ELK GROVE	S105637504		GRANT LINE RD AND EAGLES NEST RD		CHMIRS
ELK GROVE	S108402393		GRANT LINE RD AT WATERMAN		CHMIRS
ELK GROVE	S107451905		GRANT LINE RD. FRESNO SUBDIVISION MM 53.94		CHMIRS
ELK GROVE	S100219543		GRANTLINE RD		CHMIRS
ELK GROVE	S105646499		NB HIWAY 99 JUST SOUTH OF ELK GROVE BLVD.		CHMIRS
ELK GROVE	S106400502		HOOD FRANKLIN RD AT FRANKLIN		CHMIRS
ELK GROVE	S105673718		N. I-5 JUST SOUTH OF TWIN CITIES RD. CHP LOG # 441		CHMIRS
ELK GROVE	S105667182		KILCONNELL DR AND RACQUET CT,		CHMIRS
ELK GROVE	S105636605		LAGUANA OAKS @ CURRY CREEK RD		CHMIRS
ELK GROVE	S105653422		LAGUNA PARK AREA / ELK GROVE BLVD OVERPASS		CHMIRS
ELK GROVE	S105673350		LAGUNA AND STOCKTON BLVD		CHMIRS
ELK GROVE	S105882458		MILE POST 52, ELK GROVE BLVD XING		CHMIRS
ELK GROVE	S106393653		1/2 MILE SOUTH OF ELK GROVE BLVD. 700 FT EAST OF I		CHMIRS
ELK GROVE	S107452518		MILE POST 127.85 SACRAMENTO SUB. DIV.		CHMIRS
ELK GROVE	S106398383		1/3 MILES EAST OF BRADSHAW, ON CALVINE RD.		CHMIRS
ELK GROVE	S105666122		MPM 52, FRESNO SUB		CHMIRS
ELK GROVE	S106395357		MPM 52 ON THE FRESNO SUBDIVISION, NEAREST CROSS ST		CHMIRS
ELK GROVE	S106399645		NORTH OF ELK GROVE BLVD AND EAST OF EMERALD VISTA		CHMIRS
ELK GROVE	S107451662		EAST OF ACKLEY WAY AND BRUCEVILLE RD. / OPEN FIELD		CHMIRS
ELK GROVE	S104567931	RND CONSTRUCTION	9052 QUAYLE TERRACE WAY	00000	HAZNET
ELK GROVE	2001557046	SHELDON ROAD AND I-99	SHELDON ROAD AND I-99	0	ERNS
ELK GROVE	S105676864		WEST SIDE OF WINCO GROCERY STORE ON SHELDON RD.		CHMIRS
ELK GROVE	S107619979	GEORGIA PACIFIC RESINS	10399 STOCKTON BLVD		SLIC
ELK GROVE	S106103596	MCCONNELL ESTATES WINERY	10686 W STOCKTON BLVD A		CA WDS
ELK GROVE	S108403818		EAST STOCKTON BLVD AND GRANT LINE RD		CHMIRS
ELK GROVE	S107453788		STONE LAKE RESERVE, ELK GROVE BLVD AND I-5		CHMIRS
ELK GROVE	S105652450		NORTH TANK FARM - 10399 EAST STOCKTON BLVD		CHMIRS
ELK GROVE	99638199	55.5 OF THE FRESNO SUB UNDER THE HIGHWAY 99 OVERPASS	55.5 OF THE FRESNO SUB UNDER THE HIGHWAY 99 OVERPASS		ERNS
ELK GROVE	S106395051		AT THE SPUR FOR SUBURBAN PROPANE/10450 GRANT LINE		CHMIRS
ELK GROVE	S106390859		9250 THOROUGHBRED WAY AT THE DIVE SHOP ACROSS THE		CHMIRS
ELK GROVE	S105659173		TRACKS JUST SOUTH OF GERBER RD		CHMIRS
ELK GROVE	S106782303	KINGSFORD CHARCOAL PLANT	WATERMAN RD		Sacramento Co. CS
ELK GROVE	S106782302	KINGSFORD CHARCOAL COMPANY	WATERMAN RD		Sacramento Co. CS
ELK GROVE (NR)	8874011	BETW'N ELK GROVE FLORIN BETW'N *87	BETW'N ELK GROVE FLORIN BETW'N *87		ERNS
FAIR OAKS	2000538413	5140 BUENA VISTA	5140 BUENA VISTA	0	ERNS
FAIR OAKS	S105647037		12633 FAIR OAKS BLVD		CHMIRS
FAIR OAKS	S105646131		FAIR OAKS BLVD, SOUTH END OF BOB LANE		CHMIRS
FAIR OAKS	S106394027		ILLINOIS AND WINDING WAY, GO TO THE RIVER, SAILOR		CHMIRS
FAIR OAKS	S107450593		6737 LAKEWOOD WAY.		CHMIRS
FAIR OAKS	S106486489	MADISON MALL	MADISON AVENUE		SLIC
FAIR OAKS	S105666798		MANZANILLO ST AND SUNSET AVE		CHMIRS
FAIR OAKS	S106391211		NOTH OF BLUFF LANE WEST OF HAZEL AVE RESIDENTIAL A		CHMIRS
FAIR OAKS	S105637580		SOUTH OF WINDING WAY AND WEST OF SAN JUAN AVE.		CHMIRS
FAIR OAKS	2002595259	4400 SUNRISE	4400 SUNRISE	0	ERNS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
FAIR OAKS	S106399785		WENDOVER CT. AT WINDING WAY		CHMIRS
FAIR OAKS	S106398891		300 YARDS EAST OF HAZEL AVE. NEAR THE AMERICAN RIV		CHMIRS
FLORIN	91216971	CORNER OF FRUITRIDLE AND MAYHEW ST.	CORNER OF FRUITRIDLE AND MAYHEW ST.		ERNS
FLORIN	8862707	FLORIN FIRE DEPT.	FLORIN FIRE DEPT.		ERNS
FLORIN	S106400191		FRESNO SUBDIVISION MM48, NEAREST CROSS CARLISLE AV		CHMIRS
FOLSOM	S106104291	FOLSOM AUTO MALL DEALERS ASSOC	AUTO MALL DRIVE		CA WDS
FOLSOM	S107451193		BEHIND LAKE NATOMA INN		CHMIRS
FOLSOM	S102426499	GEORGE WIMPEY INC	E BIDWELL ST		Sacramento Co. CS
FOLSOM	S108405902		1301 BIDWELL INTERSECTION OF BURGER PROFESSIONAL		CHMIRS
FOLSOM	S108405354		E. BIDWELL ST. NORTH OF HIGHWAY 50		CHMIRS
FOLSOM	S106393251		BLUE RAVINE / NATOMAS, FOOTHILLS #6 - CONSTRUCTI		CHMIRS
FOLSOM	S108401394		CHILI'S CORNER OF IRON POINTE / FOLSOM BLVD.		CHMIRS
FOLSOM	S105883677		CORNER OF SIBLEY AND LEVY RD.		CHMIRS
FOLSOM	S105649037		FOLSOM PRISON, RECYCLING CENTER, 450 PRISON RD		CHMIRS
FOLSOM	S105630012		FOLSOM SOUTH CANAL BETWEEN HWY50 AND SUNRISE BLVD		CHMIRS
FOLSOM	S106390007		FOLSOM PRISON, STORM DRAIN LEADING TO AMERICAN RI		CHMIRS
FOLSOM	S105667292		FOLSOM AUTO MALL, 12747 FOLSOM BLVD		CHMIRS
FOLSOM	S106398325		FOLSOM BLVD NORTH OF HWY 50. APPROX 1.2 MILES IN T		CHMIRS
FOLSOM	S108402375		ON GREEN VALLEY RD, 1/2 MILE WEST OF THE SACRAMENT		CHMIRS
FOLSOM	S105669013		10000 GREENBACK LN.		CHMIRS
FOLSOM	S106393431		HINKLE CREEK AT BALDWIN DAM RD AND DIGGER PINE NAT		CHMIRS
FOLSOM	S106389669		INTERSECTION OF TROWER CT AND NEWARK WAY NEW SUB D		CHMIRS
FOLSOM	S105666647		IRON POINT RD AT .5 MI EAST OF PRAIRIE CITY RD		CHMIRS
FOLSOM	S105635682		1200 LEIDESDORFF FOLSOM CORPORATION YARD		CHMIRS
FOLSOM	S106104284	CORP YARD	LEIDESDORFF ST		CA WDS
FOLSOM	S106395296		LOCATION IS ON DIRT PATH OFF STAFFORD ROAD, 700 F		CHMIRS
FOLSOM	S105556963	GEORGE WIMPEY, INC. (LOS CERROS UNIT 2B)	LOS CERROS UNIT 2B		SLIC
FOLSOM	S106782287	FORMER FOLSOM LAKE FORD	9479B MADISON AVE		Sacramento Co. CS
FOLSOM	S105630308		K MART PARKING LOT LEMBI DRIVE AND RALEYS DRIVE		CHMIRS
FOLSOM	S105656117		580 EAST NATOMA STREET - FOLSOM STATE PRISON		CHMIRS
FOLSOM	S106104277	CORRECTIONAL RESOURCE	560 E NATOMA ST # B		CA WDS
FOLSOM	S105673521		570 E. NATOMAS ST.		CHMIRS
FOLSOM	S108405451		500 NATOMAS STATION RD.		CHMIRS
FOLSOM	S105644737		PRAIRIE CITY RD SOUTH OF BLUE RAVINE RD		CHMIRS
FOLSOM	S106394624		RAINBOW BRIDGE / GREENBACK S. SIDE OF RAINBOW BR		CHMIRS
FOLSOM	S105982673	CALIF. DEPARTMENT OF CORRECTIONS, FOLSOM PRISON	REPRESA		SLIC
FOLSOM	S103679788	B G P RUSSELL RANCH LLC	RUSSELL RANCH	00000	HAZNET
FOLSOM	S103946950	1X CITY/CO SAN FRANCISCO	SAN FRANCISCO FIRE DEPT	00000	HAZNET
FOLSOM	94415676	STORM DRAIN LEADING TO AMERICAN RIVER	STORM DRAIN LEADING TO AMERICAN RIVER		ERNS
FOLSOM	2003642727	SUNRISE BLVD/ SOUTH OF HWY 50	SUNRISE BLVD/ SOUTH OF HWY 50		ERNS
FOLSOM	S106400892		SUNRISE BLVD. SOUTH OF HWY. 50		CHMIRS
FOLSOM	S105653575		WATER TREATMENT PLANT, 140 RANDALL DRIVE		CHMIRS
FOLSOM	S107450714		75 YARDS EAST OF THE AUBURN FOLSOM RD BRIDGE, 50 F		CHMIRS
FOLSOM LAKE	8862860	MORMAN ISLAND @ FOLSOM LAKE	MORMAN ISLAND @ FOLSOM LAKE		ERNS
FOLSUM	2005613250	9580 OAK AVE	9580 OAK AVE		ERNS
FREEPORT	8716440	CLIFF MARINA	CLIFF MARINA		ERNS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
GALT	S103679418	FRANCIS RUSSELL	NW 1/4 MILE ON LOW SAC RD /	00000	HAZNET
GALT	S106400804		HWY 99 AT TWIN CITIES RD		CHMIRS
GALT	S106483799	FRANKLIN FIELD AIRPORT	BRUCEVILLE ROAD		SLIC
GALT	S106842902	FRANKLIN FIELD AIRPORT	12480 BRUCEVILLE / TWIN CITIES RDS		SLIC
GALT	2004713993	ELM AVE	ELM AVE		ERNS
GALT	2002081745		ON JAHANT ROAD, OFF HIGHWAY 99		HMIRS
GALT	S105885546		JAHANT TRUCK STOP, OFF HWY 99		CHMIRS
GALT	S105886609		MELADEE LN AT SOUTHDALE		CHMIRS
GALT	S105652547		OFF HWY 99, MP 111.7		CHMIRS
GALT	S105656548		ORR ROAD 1/4 MILE NORTH OF NEW HOPE ROAD		CHMIRS
GALT	S105657029		PRIVATE PROPERTY 12605 HAUSCHILDT RD		CHMIRS
GALT	S105666934		SOWELS RD. S/O LIBERTY RD.		CHMIRS
GALT	S105668672		UPRR AT TWIN CITIES ROAD		CHMIRS
GALT/TWIN CITIES(NR)	8715796	EB RT 104 TOWARDS RANCHO SECO	EB RT 104 TOWARDS RANCHO SECO		ERNS
HERALD	S105638713		ALTA MESA ROAD 1 MI. N OF TWIN CITIES ROAD		CHMIRS
HERALD	S106571362	SILVA RANCH II - BIOSOLIDS	11540 CLAYTON STATION RD		CA WDS
ISLETON	A100108710	ISLETON PLANT	1ST ST. & HWY 160		AST
ISLETON	S105982580	CALPINE NATURAL GAS COMPANY	HIGHWAY 12		SLIC
ISLETON	S106717823	RAMOS OIL BULK PLANT FACILITY	HIGHWAY 160 / I STREET		SLIC
ISLETON	S106104293	RAMOS OIL CO ISLETON	HWY 160 / 1ST ST		CA WDS
ISLETON	S100852408	RAMOS OIL BULK PLANT FACILITY	HIGHWAY 160 AND 1ST ST	00000	HAZNET, SLIC
ISLETON	S106230357	LINDSAY OLIVE OIL COMPANY (FORMER)	5TH ST AT JACKSON BLVD		SLIC
ISLETON	S106397513		1200 W. BRANNON ISLAND RD. BRUNO'S ISLAND YACHT HA		CHMIRS
ISLETON	2003644662	BRUNO'S ISLAND RESORT	BRUNO'S ISLAND RESORT		ERNS
ISLETON	91218646	CORNER OF "H" ST & ROUTE 160	CORNER OF "H" ST & ROUTE 160		ERNS
ISLETON	S106391710		ENTIRE LENGTH OF STEAMBOAT SLEW WHICH CONNECTS THE		CHMIRS
ISLETON	8716782	N. FORK MOKELUMNE RIVER @ WILLOW BERM*	N. FORK MOKELUMNE RIVER @ WILLOW BERM*		ERNS
ISLETON	S105644881		GEORGIANA SLOUGH		CHMIRS
ISLETON	2000542410	HAPPY HARBOR RESORT	HAPPY HARBOR RESORT	0	ERNS
ISLETON	S105626900	RAMOS OIL - TANKER ROLL-OVER	10698 ISLETON RD		SLIC, Sacramento Co. CS
ISLETON	S106717819	ROSETTA RESOURCES MIDLAND FEE #1	JACKSON SLOUGH RD		SLIC
ISLETON	S106486485	LINDSAY OLIVE OIL COMPANY	JACKSON BLVD.		SLIC
ISLETON	S106345060	DELTA TRANSFER STATION	LEVEE RD		Sacramento Co. CS
ISLETON	8719873	RAINBOW RESORT/BUOY-41/SAN JOAQUIN RIVER	RAINBOW RESORT/BUOY-41/SAN JOAQUIN RIVER		ERNS
ISLETON	91205100	RAMOS OIL CO.	RAMOS OIL CO.		ERNS
ISLETON	99637455	RYER ISLAND SNUG HARBOR CAMPGROUND	RYER ISLAND SNUG HARBOR CAMPGROUND		ERNS
ISLETON	S105669978		SACRAMENTO RIVER		CHMIRS, Sacramento Co. ML
ISLETON	98443684	SAN JOAQUIN RIVER 7-MILE SLEW MM 41	SAN JOAQUIN RIVER 7-MILE SLEW MM 41		ERNS
ISLETON	S105673656		SOUTH SIDE OF ISLETON		CHMIRS
ISLETON	S101331987	H R DUNN & SONS	216 2ND ST		Sacramento Co. CS
ISLETON	96505607	STEAMBOAT SLOUGH	STEAMBOAT SLOUGH		ERNS
ISLETON	S106392046		STEAMBOAT SLOUGH, OFF HOG BACK ISLAND BOAT ACCESS,		CHMIRS
ISLETON	S105631710		TWICHELL RD NEAR FERRY RD		CHMIRS
ISLETON	S105883063		1550 WEST TWITCHELL RD		CHMIRS
ISLETON	A100107804	BRANNAN ISLAND COMP. STN.	TWITCHELL ISLAND RD.		AST
ISLETON	S106483846	PG&E TYLER ISLAND DEHYDRATOR STATION	1300 TYLER ISLAND BRIDGE RD		SLIC
ISLETON	S106230389	PG&E GAS DEHYDRATOR STATION, TYLER ISLAND	TYLER ISLAND BRIDGE RD		SLIC

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ISLETON	8716861	WILLOW BERM MARINA (OFFSHORE)	WILLOW BERM MARINA (OFFSHORE)		ERNS
ISLETON (NR)	8862769	1 MI S OF MOKELUMME BRIDGE	1 MI S OF MOKELUMME BRIDGE		ERNS
ISLETON CITY	2000538925	LIGHTHOUSE MARNIA	LIGHTHOUSE MARNIA	0	ERNS
MATHER	S103958840	COUNTY OF SACRAMENTO	10300 MC CREADY	00000	HAZNET
MATHER	S105245827	MATHER AFB BLDG 7095	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245826	MATHER AFB BLDG 4001	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245825	MATHER AFB BLDG 10087	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245824	MATHER AFB - MTBE PROBLEM	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245822	MATHER AFB BLDG 18020	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245821	MATHER AFB BLDG 18015 A-B	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245820	MATHER AFB BLDG 16100	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245819	MATHER AFB BLDG 10450	MATHER FIELD RD		Sacramento Co. CS
MATHER	S105245817	MATHER ARSR FACILITY	MATHER AFB		Sacramento Co. CS
MATHER	S104970705	MATHER AFB BLDG 4316 A &B	MATHER FIELD RD		Sacramento Co. CS
MATHER	S106782291	MATHER AFB BLDG 8195	MATHER FIELD RD		Sacramento Co. CS
MATHER	S106782290	MATHER AFB BLDG 10300	MATHER FIELD RD		Sacramento Co. CS
MATHER	S106782289	MATHER AFB BLDG 10065	MATHER FIELD RD		Sacramento Co. CS
MATHER	S106782288	MATHER AFB BLDG 3865	MATHER FIELD RD		Sacramento Co. CS
MATHER	S103427176	MATHER AFB BLDG 650	MATHER FIELD RD		Sacramento Co. CS
MATHER	9999050740		10300 TRUEMPHER		HMIRS
MATHER	9900004711		10300 TRUEMPHER		HMIRS
MCCLELLAN	91206568	BLDG. 251 SE SIDE	BLDG. 251 SE SIDE		ERNS
MCCLELLAN	91466692	MCCLELLAN AFB WEST OF BLDG 652	MCCLELLAN AFB WEST OF BLDG 652		ERNS
MCCLELLAN	91466479	SM-ALC/EM	SM-ALC/EM		ERNS
MCCLELLAN	91206692	SM-ALC/EM	SM-ALC/EM		ERNS
MCCLELLAN AFB	S106394048		BLDG. 737, MCCLELLAN AFB, 5050 DUDLEY BLVD. SUITE		CHMIRS
MCCLELLAN AFB	S105668271		BUILDING 242 / BUILDING 243 @ MCCLELLAN AFB		CHMIRS
MCCLELLAN AFB	S105672711		300 FEET WEST OF DUDLEY BLVD., IN MCCLELLAN PARK		CHMIRS
MCCLELLAN AFB	91225404	SM-ALC/EM BLDG 243G	SM-ALC/EM BLDG 243G		ERNS
MIKON	2002591814	MILEPOST 86.5	MILEPOST 86.5	0	ERNS
NEAR ELK GROVE	S105646500		HIWAY NB 99 NORTH OF GRANTLINE RD		CHMIRS
NEAR ISLETON	S106389384		1 MILE SO OF ANDRUS RD , HWY 160 EAST SIDE OF THE		CHMIRS
NEAR RIO VISTA	S105665655		OWL HARBOR, B DOCK		CHMIRS
NEAR SACRAMENTO	S105647152		SB SR 99, JUST SOUTH OF CALVINE		CHMIRS
NEAR SACRAMENTO	S105639245		WB US 50 AT HOWE AVENUE		CHMIRS
NO HIGHLANDS(NR)	8713207	BLACKFOOT + MOCCASIN RDS	BLACKFOOT + MOCCASIN RDS		ERNS
NORTH HIGHLANDS	S105645867		6929 BISMARK		CHMIRS
NORTH HIGHLANDS	S105667005		BLDG. 618	CA	CHMIRS
NORTH HIGHLANDS	S105882201		CHANNING AT WATT		CHMIRS
NORTH HIGHLANDS	S105025249	TANK FARN #4	MC CLELLAN AFB		Cortese
NORTH HIGHLANDS	S105025248	BLDG 482	MC CLELLAN AFB		Cortese
NORTH HIGHLANDS	S105025247	BLDG 643	MC CLELLAN AFB		Cortese
NORTH HIGHLANDS	S105654908		DON JULIO BLVD AND ELKHORN BLVD.		CHMIRS
NORTH HIGHLANDS	8873133	5610 HILLSIDE BLVD	5610 HILLSIDE BLVD		ERNS
NORTH HIGHLANDS	8873132	5610 HILLSIDE BLVD	5610 HILLSIDE BLVD		ERNS
NORTH HIGHLANDS	S105664572		MARTINEZ, MPM 97.75, WINONA AND ROSEVILLE RD		CHMIRS
NORTH HIGHLANDS	S102431650	INDUSTRIAL BUILDING	ORANGE GROVE AVE		Sacramento Co. CS

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NORTH HIGHLANDS	S105640769		5300 RIO VERDE WAY		CHMIRS
NORTH HIGHLANDS	S105030272	CHEVRON	12860 RIVERSIDE DR	00000	HAZNET
NORTH HIGHLANDS	984226140	THE SITUATION RESOLVED ITSELF WHEN RAINS SUBSIDED	THE SITUATION RESOLVED ITSELF WHEN RAINS SUBSIDED		ERNS
NORTH HIGHLANDS	S106396729		USA GAS STATION AT ANTELOPE AND WATT AVE		CHMIRS
NORTH SACRAMENTO	95050450		W CAPITOL ST		HMIRS
NORTH SACRAMENTO	95020083		4200 W CAPITOL		HMIRS
NORTH SACRAMENTO	2000529496	MILE POST 95	MILE POST 95	0	ERNS
NORTH SACRAMENTO	S106393828		NEAR THE INTERSECTION OF AUBURN AND MARCONI IN NOR		CHMIRS
NOT APPLICABLE	1007443889	WHITE ROCK ROAD DISPOSAL SITE (ABANDONED)	INTERSECTION OF WHITE ROCK ROAD AND GRANT LINE ROAD		ODI
NOT APPLICABLE	1007443888	ELK GROVE DISPOSAL SITE-CLOSED	WATERMAN & BOND ROADS		ODI
OLD TOWN	2000542704	NORTH OF THE DRAW BRIDGE	NORTH OF THE DRAW BRIDGE	0	ERNS
ORANGEVALE	S106390084		DIRECTLY BEHIND 6967 ESCALLONIA DR INSIDE UTILIT		CHMIRS
ORANGEVALE	S105636874		DREDGER AND MAIN STREET		CHMIRS
ORANGEVALE	8875114	HAZEL AVE	HAZEL AVE		ERNS
ORANGEVALE	S105654881		WEST OF KENNETH AVENUE, SOUTH OF CENTRAL AVENUE		CHMIRS
ORANGEVALE	S106391316		EAST OF MAIN AVE A FEW A HUNDRED FEET NORTH OF WIN		CHMIRS
ORANGEVALE	S105641220		SUNSET AVE / MAIN ST		CHMIRS
PERKINS	S106396327		MILE POST 1.33 SUB. DIV. PLACERVILLE LEAD		CHMIRS
POLK	2002631493	FRUITRIDGE RD	FRUITRIDGE RD	0	ERNS
RAMONA	9999030084		RAMONA EXPRESSWAY		HMIRS
RAMONA	9900001675		RAMONA EXPRESSWAY		HMIRS
RANCHO CARDOVA	8721673	LINCOLN VILLAGE CENTER	LINCOLN VILLAGE CENTER		ERNS
RANCHO CORDOBA	91227041	FOLSOM BLVD AND AERO JET ROAD	FOLSOM BLVD AND AERO JET ROAD		ERNS
RANCHO CORDOVA	99643866	HWY 50 AND HAZEL AVE	HWY 50 AND HAZEL AVE		ERNS
RANCHO CORDOVA	S105886511		HWY 50 AT AEROJET RD		CHMIRS
RANCHO CORDOVA	S105662366		HWY 50 AT HAZEL, BUILDING #05025		CHMIRS
RANCHO CORDOVA	S106230381	SACRAMENTO SAVINGS BANK, SUNRISE INDUSTRIAL PARK**	HIGHWAY 50 / COLOMA RD, CITRUS & GOLD RIVER RDS		SLIC
RANCHO CORDOVA	96479498	HWY 50 AT AERO JET RD	HWY 50 AT AERO JET RD		ERNS
RANCHO CORDOVA	S108402713		EB 50 EAST OF MATHER FIELD		CHMIRS
RANCHO CORDOVA	9998030037		HWY 50 HAZEL AVENUE		HMIRS
RANCHO CORDOVA	2002628017	HWY 50 AEROJET ROAD	HWY 50 AEROJET ROAD	0	ERNS
RANCHO CORDOVA	S106484132	MCDONNELL DOUGLAS/AEROJET INACTIVE	4000 ACRES BOUNDED BY DOUGLAS / SUNRISE		SLIC
RANCHO CORDOVA	S100216308		AERO JET GENERAL CORP. BUILDING 20-004		CHMIRS
RANCHO CORDOVA	91226418	AERO JET PROPERTY HWY 50 AND HAZEL AVE.	AERO JET PROPERTY HWY 50 AND HAZEL AVE.		ERNS
RANCHO CORDOVA	91466408	AERO JET GENERAL HWY 50 AND AERO JET RD	AERO JET GENERAL HWY 50 AND AERO JET RD		ERNS
RANCHO CORDOVA	S100278896		AERO-JET GENERAL CORP. F AREA		CHMIRS
RANCHO CORDOVA	S104310468	DEEP DISPOSAL WELL #2	AEROJET RD		CA WDS
RANCHO CORDOVA	S105256601	DEEP DISPOSAL WELL #1	AEROJET RD		CA WDS
RANCHO CORDOVA	S105255240	SACRAMENTO FACILITY	AEROJET RD		CA WDS
RANCHO CORDOVA	S105655921		AEROJET PLANT - PLANT 1, PROCESS BUILDING		CHMIRS
RANCHO CORDOVA	S106230359	AEROJET-GENERAL CORPORATION	AEROJET RD / FOLSOM BLVD - 8500 ACRES		SLIC
RANCHO CORDOVA	S100217350		AEROJET GENERAL BLDG. 04035		CHMIRS
RANCHO CORDOVA	S106230360	AIR FORCE PLANT #70 (SACRAMENTO)	AKRON ST #70		SLIC
RANCHO CORDOVA	8873638	AMERICAN ENVIRONMENTAL	AMERICAN ENVIRONMENTAL		ERNS
RANCHO CORDOVA	8873174	"F" AREA (FD)	"F" AREA (FD)		ERNS

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RANCHO CORDOVA	S108402306		BEAR HOLLOW AT NORTH MATHER BLVD		CHMIRS
RANCHO CORDOVA	S106393783		NORTH BOUND SUNRISE BLVD. NORTH OF SUNRISE GOLD CI		CHMIRS
RANCHO CORDOVA	8871559	BUSINESS LOCATION	BUSINESS LOCATION		ERNS
RANCHO CORDOVA	S103982024	PITT DES MOINES INC STROCAL	3605-9625 BUTTERFIELD WY	00000	HAZNET
RANCHO CORDOVA	91240276	1100 COBBLESTONE WAY	1100 COBBLESTONE WAY		ERNS
RANCHO CORDOVA	8872869	COOK CO	COOK CO		ERNS
RANCHO CORDOVA	S105255241	AEROJET (LANDFILL)	DEPT 5784/BLDG 20019		CA WDS
RANCHO CORDOVA	S106104276	PICK N PULL AUTO DISMANTLERS	1135 DISMANTLE CT		CA WDS
RANCHO CORDOVA	S105689343	SEQURITY PARK ADMIN GWTP	DOUGLAS RD / SEQURITY PARK		CA WDS
RANCHO CORDOVA	S100279832		DOUGLAS ROAD-SECURITY PARK DRIVE		CHMIRS
RANCHO CORDOVA	S100280695		DRAINAGE DITCH AT MICRON / MAYHEW RD.		CHMIRS
RANCHO CORDOVA	S102799506	MORTON FRIEDMAN/SUNRISE LAND DEV	PT EAST DRIVE A P N #058-270-	00000	HAZNET
RANCHO CORDOVA	S107448358		11325 FOLSOM BLVD (HERTZ EQUIPMENT RENTAL)		CHMIRS
RANCHO CORDOVA	8873637	FOUR PAWS PETS	FOUR PAWS PETS		ERNS
RANCHO CORDOVA	S106447111	PIPELINE WITHIN STREETS TO CON	GOLDFIELD DR		CA WDS
RANCHO CORDOVA	92256874	INTERSECTION OF HY 50 & HAZEL AVE.	INTERSECTION OF HY 50 & HAZEL AVE.		ERNS
RANCHO CORDOVA	S100279455		KIEFER BLV/HAPPY LANE		CHMIRS
RANCHO CORDOVA	S105646001		LEVEL ONE COMMUNICATIONS 9750 GOETHE RD		CHMIRS
RANCHO CORDOVA	S103976705	MATHER AFB - VA HOSPITAL	LOWER PLACERVILLE RD	00000	HAZNET
RANCHO CORDOVA	S105654003		MATHER FIELD RD AND MILLS STATION RD		CHMIRS
RANCHO CORDOVA	S106230384	MATHER AIR FORCE BASE (CLOSED, NOW MATHER FIELD)	MATHER RD - 5,385 ACRES		SLIC
RANCHO CORDOVA	8874096	MINI-LUBE	MINI-LUBE		ERNS
RANCHO CORDOVA	S108406843		MIRA DEL RIO, CROSS STREET OF STOUGHTON		CHMIRS
RANCHO CORDOVA	S106398287		NEAR 2348 ZINFANDEL		CHMIRS
RANCHO CORDOVA	S100424594	DELTA CONSTRUCTION - AERO	NEW YORK RD		Cortese
RANCHO CORDOVA	S108403238		NIMBUS FISH HATCHERY OFFICE, NEAR 1701 NIMBUS ROAD		CHMIRS
RANCHO CORDOVA	S107453708		SOUTH OF AEROJET ON WHITEROCK RD		CHMIRS
RANCHO CORDOVA	S105669285		10375 OLD PALACERVILLE RD, MATHER AFB		CHMIRS
RANCHO CORDOVA	S105632212		PITRIGE/ GOLD RUN		CHMIRS
RANCHO CORDOVA	S105256086	ARDEN-CORDOVA WATER SERVICE	3035 PROSPECT PARK 60		CA WDS
RANCHO CORDOVA	S106401019		RANCHO CORDOVA		CHMIRS
RANCHO CORDOVA	S106104298	B M W AUTO RECYCLING	3697 RECYCLE RD UNIT 2		CA WDS
RANCHO CORDOVA	S106104296	IMPORT AUTO DISMANTLING	3697 RECYCLE RD 1		CA WDS
RANCHO CORDOVA	S105643788		ROSSMORE BAR		CHMIRS
RANCHO CORDOVA	S107454222	WHITE ROCK ROAD LANDFILL - SOUTH	S SIDE WHITE ROCK RD 1M W GRANT LINE RD		SWF/LF
RANCHO CORDOVA	90465959	EAST SIDE OF BUILDING SEWARD DR.	EAST SIDE OF BUILDING SEWARD DR.		ERNS
RANCHO CORDOVA	S106486534	SACRAMENTO SAVINGS BANK, SUNRISE INDUSTRIAL PARK	SITE BOUNDED BY- HWY 50 / COLOMA ROAD		SLIC
RANCHO CORDOVA	S106104285	SUBARU SUZUKI AUTO RECYCLING	3590 SUNRISE BLVD STE 5		CA WDS
RANCHO CORDOVA	S106104279	M & S RECYCLING	3590 SUNRISE BLVD STE 1		CA WDS
RANCHO CORDOVA	S105629395		11037 TRADE CENBTER BLVD		CHMIRS
RANCHO CORDOVA	S107737692		UNKNOWN		CDL
RANCHO CORDOVA	S105674924		WB US50 AT BRADSHAW RD.		CHMIRS
RANCHO CORDOVA	S100280727		WHITE ROCK / OLD PLACERVILLE RD.		CHMIRS
RANCHO CORDOVA	S105025665	WHITE ROCK ROAD LANDFILL	WHITE ROCK RD / GRAND LIN		Cortese
RANCHO CORDOVA	1009619605	10418 S WHITE ROCK RD APT A	10418 S WHITE ROCK RD APT A		US CDL

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RANCHO CORDOVA	94070810		WHITE ROCK ROAD		HMIRS
RANCHO CORDOVA	S108404984		WHITE ROCK RD LUYUNG DR		CHMIRS
RANCHO MURIETA	S102800526	T.M.P. INVESTMENTS,INC.	BAXTER RD. / MEADOWLARK	00000	HAZNET
RANCHO MURIETTA	S106394133		HWY 16 AT RANCHO MURIETTA PARKWAY, SHELL GAS STATI		CHMIRS
RANCO CORDOVO	91205246	AERO JET GENERAL HWY 50 AND AERO JET RD	AERO JET GENERAL HWY 50 AND AERO JET RD		ERNS
REPRESA	S105653415		ON 3RD ST ON THE PRISON GROUNDS		CHMIRS
REPRESA	S105677542		FOLSOM STATE PRISON, IST BUILDING		CHMIRS
REPRESA	S105067557	FOLSOM PRISON-GREEN VALLEY	560 E NATOMA ST		Sacramento Co. CS
REPRESA	S105657362		RECIEVING / RELEASE AREA ON THE PRISION GROUNDS		CHMIRS
RIO LINDA	S106396894		16TH AND E		CHMIRS
RIO LINDA	S105651635		22ND STREET AT ELKHORN BLVD		CHMIRS
RIO LINDA	92262982	32ND ST 75' NORTH OF I ST	32ND ST 75' NORTH OF I ST		ERNS
RIO LINDA	S105648727		M AT 2ND		CHMIRS
RIO LINDA	S105662643		CORNER OF 28TH STREET AND Q STREET		CHMIRS
RIO LINDA	90171215	DRY CREEK RD AND V ST.	DRY CREEK RD AND V ST.		ERNS
RIO LINDA	87463985	DRY CREEK IN CENTRAL PARK	DRY CREEK IN CENTRAL PARK		ERNS
RIO LINDA	S105670104		MILE POST MARKER 147.7 SACRAMENTO SUB DIV.		CHMIRS
RIO LINDA	S102803183	SAC AREA FLOOD AGENCY	3/4 MI SO. OF ELK HORN BLVD,	00000	HAZNET
RIO VISTA	97406460	HWY 12 MM:NONE NEAR THE RIO VISTA BRIDGE	HWY 12 MM:NONE NEAR THE RIO VISTA BRIDGE		ERNS
RIO VISTA	2000541646	ON 3 MILE SLOUGH	ON 3 MILE SLOUGH	0	ERNS
RIO VISTA	2006796014	5.3 MILES S. OF STATE HWY 12	5.3 MILES S. OF STATE HWY 12		ERNS
RIO VISTA	2002600333	SACRAMENTO DELTA	SACRAMENTO DELTA	0	ERNS
RIO VISTA	99613313	VICINITY OF RIO VISTA BRIDGE	VICINITY OF RIO VISTA BRIDGE		ERNS
RIOLINDA	878423	IN CENTRAL PARK IN DRY CREEK	IN CENTRAL PARK IN DRY CREEK		ERNS
RIOVISTA	2007427542	5.3 MILES SOUTH OF HWY 12 ON H	5.3 MILES SOUTH OF HWY 12 ON H		HMIRS
RIVER CITY	92258389	HAYES TRUCK STOP	HAYES TRUCK STOP		ERNS
SACAMENTO	2002632128	BERTH #8 IN PORT OF SACRAMENTO	BERTH #8 IN PORT OF SACRAMENTO	0	ERNS
SACAREMENTO	2002595268	FRUITRIDGE RD AND FRANKLIN BLVD	FRUITRIDGE RD AND FRANKLIN BLVD	0	ERNS
SACRAMENTO	8713535	(RP)PROCTOR & GAMBLE(SCALLAY)	(RP)PROCTOR & GAMBLE(SCALLAY)		ERNS
SACRAMENTO	87463746	(RP)SWIFT AUTO WORLD	(RP)SWIFT AUTO WORLD		ERNS
SACRAMENTO	S100279153		I-80 / EL CENTRO RD.		CHMIRS
SACRAMENTO	96486915	04/10/1996	04/10/1996		ERNS
SACRAMENTO	2002080307		I-80 1 MI E OF EXIT		HMIRS
SACRAMENTO	S105665437		NORTH 10TH @ NORTH B ST		CHMIRS
SACRAMENTO	S107448316		10TH ST. AT CAPITOL MALL		CHMIRS
SACRAMENTO	S105634132		12TH AVENUE AND FRANKLIN BLVD.		CHMIRS
SACRAMENTO	2001568734	MP 139.75	MP 139.75	0	ERNS
SACRAMENTO	S106230362	AUTO WRECKING YARD PROPERTY	1417, 1421, 1427, 1429, 1435 AUBURN BLVD		SLIC
SACRAMENTO	S105634770		14TH AVE AND POWER IN ROAD		CHMIRS
SACRAMENTO	S105630155		14TH AVE WEST OF STOCKTON BLVD		CHMIRS
SACRAMENTO	S106230355	14TH AVE LANDFILL- EAST PIT	14TH AVE AND POWER INN RD, EAST OF RAILROAD TRACKS		SLIC
SACRAMENTO	93342534	14TH AVE W OF STOCKTON BLVD	14TH AVE W OF STOCKTON BLVD		ERNS
SACRAMENTO	S105655458		15TH STREET BETWEEN ELVIS AND SACRAMENTO DEPOT		CHMIRS
SACRAMENTO	S105664369		15TH AVE AND 22ND ST. IN AN ALLEY		CHMIRS
SACRAMENTO	94120699		15TH STREET		HMIRS
SACRAMENTO	S105629306		SR 16 AT DILLARD RD		CHMIRS
SACRAMENTO	S105673478		2225 W 16 TH ST		CHMIRS

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SACRAMENTO	2003130653		HWY 160 @ HWY 12		HMIRS
SACRAMENTO	S105667561		16TH ST CROSSING		CHMIRS
SACRAMENTO	S105655188		18TH AT EAST RAILROAD		CHMIRS
SACRAMENTO	S105885199		18TH AND R ST		CHMIRS
SACRAMENTO	S105642554		SR160, 1MILE SOUTH OF FREEPORT		CHMIRS
SACRAMENTO	S105882310		20TH STREET AND C STREET		CHMIRS
SACRAMENTO	S100221412		21ST W STREET		CHMIRS
SACRAMENTO	S105653596		22ND AND Q ST.		CHMIRS
SACRAMENTO	S105882777		23RD AVE AND WAREHOUSE WY		CHMIRS
SACRAMENTO	S105631759		23RD AVE AND FRANKLIN BLV D		CHMIRS
SACRAMENTO	S107449335		23RD AT FLORIN PERKINS		CHMIRS
SACRAMENTO	S105887667		25TH ST AND FLORIN RD		CHMIRS
SACRAMENTO	S105675164		26TH ST. AT W ST.		CHMIRS
SACRAMENTO	S108086707	EL CAMINO & EVERGREEN PROPERTIES	900-940 / 2740; 2308 EL CAMINO & BOXWOOD ST.; EV		SLIC
SACRAMENTO	S107532210		27TH AND BROADWAY, BEHIND SUBWAY SANDWICHES	0	CDL
SACRAMENTO	S105886060		28TH AND C ST OR 28TH AND B ST		CHMIRS
SACRAMENTO	S105630545		28TH ST ALLEY WAY BETWEEB C AND D		CHMIRS
SACRAMENTO	S103974985	LINDEMAN BROTHERS_INC	29TH / C	00000	HAZNET
SACRAMENTO	S106486396	CALTRANS EQUIPMENT HEADQUARTERS	34TH STREET		SLIC
SACRAMENTO	S105884277		37TH AVE AND FRANKLIN BLVD		CHMIRS
SACRAMENTO	2005616949	39TH STREET STATION	39TH STREET STATION		ERNS
SACRAMENTO	S105637677		41ST AT "Y" STREET		CHMIRS
SACRAMENTO	S108402177		47TH ST AND LEMON HILL OFF 65TH ST		CHMIRS
SACRAMENTO	S105887460		NB 5 AT POCKET RD.		CHMIRS
SACRAMENTO	S105887387		NB 5 NORTH OF 160 OVERCROSSING.		CHMIRS
SACRAMENTO	S105646359		SB 5 AT LAGUNA BLVD ON RAMP		CHMIRS
SACRAMENTO	S105673035		NB 5 AT Q ST.		CHMIRS
SACRAMENTO	S105673027		NB 5 N/O FLORIN		CHMIRS
SACRAMENTO	S105670289		SB 5 TO EB 50		CHMIRS
SACRAMENTO	97040013		INTERSTATE 5		HMIRS
SACRAMENTO	S107453527		SB 5 AT Q ST		CHMIRS
SACRAMENTO	S107452795		N/B 5 SOUTH OF FRUITRIDGE		CHMIRS
SACRAMENTO	91236902	I80-I 5 GARDEN HWY SO OF I-80	I80-I 5 GARDEN HWY SO OF I-80		ERNS
SACRAMENTO	2002034122		HIGHWAY 50 E AT WATT		HMIRS
SACRAMENTO	S105648953		HWY 50 AND 65TH AVENUE		CHMIRS
SACRAMENTO	S105255242	INTERIM GROUND WTP	HIGHWAY 50 / AEROJET RD		CA WDS
SACRAMENTO	S105643135		EB 50 TO NB 51		CHMIRS
SACRAMENTO	S105674175		HWY 50 EB AT 24TH ST.		CHMIRS
SACRAMENTO	S105669189		WB 50 AT 10TH STREET OFF RAMP		CHMIRS
SACRAMENTO	S105665215		HWY 50 JUST E/O I5		CHMIRS
SACRAMENTO	S106397341		WB 50 AT 59TH ST.		CHMIRS
SACRAMENTO	95091357		HWY 50 AT HOWE AVE		HMIRS
SACRAMENTO	91217148	HWY 50 AND AEROJET RD	HWY 50 AND AEROJET RD		ERNS
SACRAMENTO	2005706531	52ND AVENUE	52ND AVENUE		HMIRS
SACRAMENTO	S105673018		NORTH 5TH STREET		CHMIRS
SACRAMENTO	S105659643		64TH ST AT FRUITRIDGE RD		CHMIRS
SACRAMENTO	S107450561		64TH ST. AND FOLSOM BLVD.		CHMIRS

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SACRAMENTO	S104970682	SP/UP RR RIGHT OF WAY	65TH ST		Sacramento Co. CS
SACRAMENTO	S105639543		65TH ST AT FOLSOM BLVD		CHMIRS
SACRAMENTO	S107450624		69TH AND FOLSOM BLVD. 1601 69TH STREET IS CLOSEST		CHMIRS
SACRAMENTO	S105646187		EB 80 #3 LANE BRYTBEND BRIDGE TO WEST EL CAMINO		CHMIRS
SACRAMENTO	S105644121		WB 80 EAST OF NORTHGATE BLVD		CHMIRS
SACRAMENTO	S105666328		WB 80 AT MADISON		CHMIRS
SACRAMENTO	S106396545		WB 80 EAST OF TRUXEL		CHMIRS
SACRAMENTO	S106400032		EB 80 WEST OF NORWOOD		CHMIRS
SACRAMENTO	2001010866		8205		HMIRS
SACRAMENTO	9999050752		8205		HMIRS
SACRAMENTO	9900004720		8205		HMIRS
SACRAMENTO	200195		8205		HMIRS
SACRAMENTO	8872921	SB 99 N OF FRUITRIDGE	SB 99 N OF FRUITRIDGE		ERNS
SACRAMENTO	S105640078		NB 99 JUST NORTH OF ELK GROVE BLVD		CHMIRS
SACRAMENTO	S105634877		S/B 99 AT CUNSUMNES RIVER BRIDGE EXIT		CHMIRS
SACRAMENTO	S105634592		NB 99 AT SO OF TWIN CITIES RD		CHMIRS
SACRAMENTO	S105663903		NB 99 AT FLORIN RD.		CHMIRS
SACRAMENTO	S105661022		N/B 99 AT THE FRUITRIDGE OFFRAMP		CHMIRS
SACRAMENTO	S105647155		SB 99 AT CALVINE ON RAMP		CHMIRS
SACRAMENTO	S105646171		SB 99 AT FLORIN ROAD		CHMIRS
SACRAMENTO	S105634133		S/R 99 @ FRUITRIDGE AND N/B ON FRANKLIN		CHMIRS
SACRAMENTO	S105674707		NB 99 AT FLORIN RD		CHMIRS
SACRAMENTO	S106396649		HWY 99 AT 47TH AVE		CHMIRS
SACRAMENTO	S108402430		NB 99 NOF 47TH AVE.		CHMIRS
SACRAMENTO	8722233	@ ABANDONED SERVICE STN	@ ABANDONED SERVICE STN		ERNS
SACRAMENTO	S105631320		29350 ACADEMY WAY		CHMIRS
SACRAMENTO	S105650339		ACROSS STREET FROM 320 HARRIS AVE		CHMIRS
SACRAMENTO	90466095	AEROJET RD	AEROJET RD		ERNS
SACRAMENTO	87463595	AIR FORCE DOCK	AIR FORCE DOCK		ERNS
SACRAMENTO	87946	AIR FORCE DOCK FACILITY ON SACRAMENTO RIVER GARDEN HWY	AIR FORCE DOCK FACILITY ON SACRAMENTO RIVER GARDEN HWY		ERNS
SACRAMENTO	S106391723		AIRCO NEAR 2700 ACADEMY WAY MARYSVILLE BLVD AND P		CHMIRS
SACRAMENTO	8722572	AIRCO MECHANICAL INC.	AIRCO MECHANICAL INC.		ERNS
SACRAMENTO	S108406412		7330 AIRHART DR		CHMIRS
SACRAMENTO	S105882356		AIRPORT ROAD AND SAN JUAN ROAD		CHMIRS
SACRAMENTO	S107448349		1125 ALAHAMBRA BLVD (RITE AID)		CHMIRS
SACRAMENTO	S102803824	SACRAMENTO CITY U.S.D. ALBERT EINSTIEN	ALBERT EINSTIEN MIDDLE SCHOOL	00000	HAZNET
SACRAMENTO	S105670070		ALBERTA RD. AND POWER LINE RD.		CHMIRS
SACRAMENTO	S106390441		ALBERTSON'S (PARKING LOT) 6737 WATT AVE. CROSS ST		CHMIRS
SACRAMENTO	S105885689		ALHAMBRA AND C STREET		CHMIRS
SACRAMENTO	S105643093		1603 ALHAMBRA BLVD UCD MED CENTER		CHMIRS
SACRAMENTO	S100279797		ALLEY 18 / 19 N./35 & 36 STREET		CHMIRS
SACRAMENTO	2000517835	ALONG LONG VIEW RD	ALONG LONG VIEW RD	0	ERNS
SACRAMENTO	8857124	IN AMERICAN RIVER NR:5TH ST	IN AMERICAN RIVER NR:5TH ST		ERNS
SACRAMENTO	S105885407		AMERICAN RIVER NEAR THE DISCOVERY PARK AREA		CHMIRS
SACRAMENTO	S105658696		AMERICAN RIVER, BERCUT RICHARDS LEVEE		CHMIRS
SACRAMENTO	S106395034		AMERICAN RIVER JUST SOUTH OF BUSINESS 80, NEAR THE		CHMIRS

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SACRAMENTO	S106391352		AMERICAN RIVER CAME FROM A STORM DRAIN 1/4 EAST O		CHMIRS
SACRAMENTO	93333011	AMERICAN RIVER FISH HATCHERY	AMERICAN RIVER FISH HATCHERY		ERNS
SACRAMENTO	S107451071		AMERICAN RIVER BY DISCOVERY PARK		CHMIRS
SACRAMENTO	S108543278	UNION PACIFIC - AMERICAN RIVER TRESTLE FIRE SITE	AMERICAN RIVER FREIGHT CROSSING		SLIC
SACRAMENTO	8716637	AMERICAN RIVER/N. OF: X SACRAMENTO RIVER	AMERICAN RIVER/N. OF: X SACRAMENTO RIVER		ERNS
SACRAMENTO	2000540781	AMERICAN RIVER	AMERICAN RIVER	0	ERNS
SACRAMENTO	S107451072		AMTRAC STATION, 5TH AND I STREET. ENGINEER ON THE		CHMIRS
SACRAMENTO	S105659561		AMTRACK STATION 3RD ST		CHMIRS
SACRAMENTO	8875055	I-80 AND EL CENTRO RD	I-80 AND EL CENTRO RD		ERNS
SACRAMENTO	8875054	I-80 AND EL CENTRO RD	I-80 AND EL CENTRO RD		ERNS
SACRAMENTO	S105636370		15 AND J TO 15TH AND L		CHMIRS
SACRAMENTO	S105669539		H AND 19TH STREET		CHMIRS
SACRAMENTO	S106400576		I-88 AND FRUITRIDGE AVE		CHMIRS
SACRAMENTO	96040987		I-80 AND 1-5		HMIRS
SACRAMENTO	S107452121		I80 AND EAST LEVY RD.		CHMIRS
SACRAMENTO	S107453411		S AND C TRUCK SERVICE ON PELL DRIVE		CHMIRS
SACRAMENTO	2000530088	I-80 AND BUSINESS 80 &	I-80 AND BUSINESS 80 &	0	ERNS
SACRAMENTO	S105025947	NORTH ANTELOPE PROPERTY	ANTELOPE RD N		LUST, Cortese
SACRAMENTO	S102428648	DARU DEVELOPMENT	ANTELOPE RD		Sacramento Co. CS
SACRAMENTO	S106394287		APPROX. FRONT ST. / BROADWAY @ THE SACRAMENTO RI		CHMIRS
SACRAMENTO	90162531	ARCO STATION 3921 WATT STREET	ARCO STATION 3921 WATT STREET		ERNS
SACRAMENTO	8873758	ARCO AM/PM	ARCO AM/PM		ERNS
SACRAMENTO	S105653847		ARDEN WAY AT FULTON		CHMIRS
SACRAMENTO	S105648505		ARDEN WAY AND CROSS OF MORRIS AT THE UNION 76		CHMIRS
SACRAMENTO	S105645777		30 ARDEN WAY ACROSS FROM ATLAS RECYCLE CENTER		CHMIRS
SACRAMENTO	1010309917	PACIFIC GAS & ELECTRIC	ARENA BLVD & PROSPER ROAD		DOT OPS
SACRAMENTO	8874367	AREOJET GENERAL P THOMAS	AREOJET GENERAL P THOMAS		ERNS
SACRAMENTO	S105689345	INTERIM TREATMENT SYSTEM	ARMSTRONG AVE		CA WDS
SACRAMENTO	S106230361	MCCLELLAN AIR FORCE BASE (CLOSING IN 2001)	5241 ARNID AVE, 10 MILES NORTH OF DOWNTOWN SACRAME		SLIC
SACRAMENTO	90187386	ARROWJET RD	ARROWJET RD		ERNS
SACRAMENTO	S106782284	CITY OF SACRAMENTO	I-5 AT SAN JUAN AVE		Sacramento Co. CS
SACRAMENTO	S105677807		I-5 AT RICHARDS BLVD OFF RAMP		CHMIRS
SACRAMENTO	S105663324		243 G, AT MCCLELLAN AFB		CHMIRS
SACRAMENTO	2007421548	6001 AUBOLIS BLVD	6001 AUBOLIS BLVD		HMIRS
SACRAMENTO	S105651396		AUBURN AT MADISON NEAREST ADDRESS IS 4636 AUBURN		CHMIRS
SACRAMENTO	S105885224		AUBURN BLVD AT GARFIELD		CHMIRS
SACRAMENTO	1009619600	5867 AUBURN BLVD APT 30	5867 AUBURN BLVD APT 30		US CDL
SACRAMENTO	S106390027		7901 AUBURN BLVD. AT FIRESIDE BOWING ALLY PARKIN		CHMIRS
SACRAMENTO	94415739	7901 AUBURN BLVD--FIRESIDE BOWLING ALLY PARKING LOT	7901 AUBURN BLVD--FIRESIDE BOWLING ALLY PARKING LOT		ERNS
SACRAMENTO	S106400027		AUBURN BLVD AND LOAHSE WAY		CHMIRS
SACRAMENTO	S105631116		3610 52ND AVE (DISAND TRUCKING)		CHMIRS
SACRAMENTO	S107450026		4 AVE AT 65TH ST.		CHMIRS
SACRAMENTO	S105642682		1391 35TH AVENUE WATER TREATMENT PLANT		CHMIRS
SACRAMENTO	S105661912		AVIS, SACRAMENTO INT'L AIRPORT		CHMIRS

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SACRAMENTO	S106390914		BACK WEST OF 4789 MANZANITA AVE FOXWORTH APT CO		CHMIRS
SACRAMENTO	8716427	930 BAKER LANE	930 BAKER LANE		ERNS
SACRAMENTO	S100221481		2283 BAKETTE WAY		CHMIRS
SACRAMENTO	S106394613		SOUTH BANK OF THE AMERICAN RIVER, BETWEEN 10TH ST		CHMIRS
SACRAMENTO	S106842900	MICHELETTI PROPERTY	BARSTOW ST		SLIC
SACRAMENTO	S106399251		BAY DR. AND EDGEWATER RD.		CHMIRS
SACRAMENTO	S105636218		2465 BEAUMONT ST NORTH SAC OFF DEL PASO BLVD		CHMIRS
SACRAMENTO	9999070152		8205 BEEY AVE		HMIRS
SACRAMENTO	9900007199		8205 BEEY AVE		HMIRS
SACRAMENTO	8866481	BEHIND HOUSE AT 5408 DICHY CIRCLE	BEHIND HOUSE AT 5408 DICHY CIRCLE		ERNS
SACRAMENTO	S105656607		BEHIND 500 LEISURE LANE		CHMIRS
SACRAMENTO	S108406536		BEHIND 5504 FLORIN RD.		CHMIRS
SACRAMENTO	S107537814		BEHIND 6220 MACK RD	0	CDL
SACRAMENTO	S105677163		BEHIND, 1039 MILLET WAY		CHMIRS
SACRAMENTO	S107451195		BELL AV PINELL ST		CHMIRS
SACRAMENTO	S105644905		BELLVIEW AVE / FRUITRIDGE RD		CHMIRS
SACRAMENTO	8872841	BERCO REDWOOD CO	BERCO REDWOOD CO		ERNS
SACRAMENTO	2005702628	82005 BERRY AVENUE	82005 BERRY AVENUE		HMIRS
SACRAMENTO	2002085105		5205 BERRY AVENUE		HMIRS
SACRAMENTO	2002084344		5205 BERRY AVENUE		HMIRS
SACRAMENTO	97050122		3205 BERRY AVE		HMIRS
SACRAMENTO	97031183		6205 BERRY AVE		HMIRS
SACRAMENTO	97031175		6205 BERRY AVE		HMIRS
SACRAMENTO	97030863		6205 BERRY AVE		HMIRS
SACRAMENTO	97030820		6205 BERRY AVE		HMIRS
SACRAMENTO	97030592		6205 BERRY AVENUE		HMIRS
SACRAMENTO	97030088		6205 BERRY AVENUE		HMIRS
SACRAMENTO	96050842		BERRY AVENUE		HMIRS
SACRAMENTO	94081165		2808 BERRY AVENUE		HMIRS
SACRAMENTO	94080555		850 BERRY ST		HMIRS
SACRAMENTO	94080092		8205 BERRY QAVE		HMIRS
SACRAMENTO	9998061272		9205 BERRY AVE.		HMIRS
SACRAMENTO	2000543639	BERRY STREET	BERRY STREET	0	ERNS
SACRAMENTO	9999011131		8205 BERRYAVE		HMIRS
SACRAMENTO	S105630867		BETWEEN ANTELOPE AREA +ROSEVILLE		CHMIRS
SACRAMENTO	S106395041		BETWEEN THREE COUNTIES MERCED CO, SAN JOAQUIN CO,		CHMIRS
SACRAMENTO	S107451249		BETWEEN CITY COLLEGE AND FRUITRIDGE, ALONG THE UPR		CHMIRS
SACRAMENTO	S105885112		BIRTH 6 PORT OF SACRAMENTO.		CHMIRS
SACRAMENTO	8716850	BLACKFOOT WY,BT.SUNMAIDEN WY&MOCCASIN DR	BLACKFOOT WY,BT.SUNMAIDEN WY&MOCCASIN DR		ERNS
SACRAMENTO	S103678285	DEPT OF TOXIC SUBSTANCES CONTROL	BLANKET ID FOR EMERGENCY USE-	00000	HAZNET
SACRAMENTO	8874710	BLDG 2004 HWY 50 HAZEL AVE	BLDG 2004 HWY 50 HAZEL AVE		ERNS
SACRAMENTO	91466838	BLDG 700 AREA D	BLDG 700 AREA D		ERNS
SACRAMENTO	91223363	BLDG 700 AREA D	BLDG 700 AREA D		ERNS
SACRAMENTO	91224395	BLDG 700, AREA D	BLDG 700, AREA D	-	ERNS
SACRAMENTO	8873838	BLDG. 2000 HAZEL AVE. OFF HWY 50	BLDG. 2000 HAZEL AVE. OFF HWY 50		ERNS
SACRAMENTO	S105654361		8600 BLOCK FOLSOM @ FLORIN PERKINS		CHMIRS
SACRAMENTO	96081025		300 BLOCK OF BROADWAY		HMIRS

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SACRAMENTO	8857074	BLOMBERG WINDOW SYSTEMS *87	BLOMBERG WINDOW SYSTEMS *87		ERNS
SACRAMENTO	8873309	BLOMBERG WINDOW SYSTEMS (G CON	BLOMBERG WINDOW SYSTEMS (G CON		ERNS
SACRAMENTO	8873249	BLOMBERG WINDOW SYSTEMS	BLOMBERG WINDOW SYSTEMS		ERNS
SACRAMENTO	8719819	BLUMBERG WINDOW(G CONTUS)	BLUMBERG WINDOW(G CONTUS)		ERNS
SACRAMENTO	S106398960		2200 F.O. BLVD.		CHMIRS
SACRAMENTO	S107451296		BONNIE MAY JUST SOUTH OF FRUITRIDGE		CHMIRS
SACRAMENTO	S105643402		NORTH BOUND I5 AT POCKET RD		CHMIRS
SACRAMENTO	S105673033		NORTH BOUND I-5, SO OF J ST.		CHMIRS
SACRAMENTO	S105665615		WEST BOUND US 50 EAST OF STOCKTON BLVD		CHMIRS
SACRAMENTO	S106391837		NORTH BOUND SR 51, CAPITOL CITY FREEWAY, AT WATT O		CHMIRS
SACRAMENTO	S106397753		EAST BOUND 80 CONNECTOR RAMP TO NB 5		CHMIRS
SACRAMENTO	S105631347		BRADSHAW AND GERBER RD.		CHMIRS
SACRAMENTO	S106391432		BRADSHAW AND JACKSON ROADS EXTENDING ALL THE WAY D		CHMIRS
SACRAMENTO	S108404107		BRADSHAW TERMINAL		CHMIRS
SACRAMENTO	S106104283	BRANCH CENTER CORP YARD	BRANCH CENTER RD / KIEFER		CA WDS
SACRAMENTO	S105651343		NORTH BRIDGE APTS, 5520 HARRISON ST		CHMIRS
SACRAMENTO	S105632417		BROADWAY STREET, MILEPOST 92.		CHMIRS
SACRAMENTO	S106400568		BROADWAY AND 24 ST. IN THE ALLEY		CHMIRS
SACRAMENTO	S106399950		BROOKFIELD DR AND MORRISON CREEK		CHMIRS
SACRAMENTO	S102436234	LAGUNA CROSSROADS	BRUCEVILLE RD		Sacramento Co. CS
SACRAMENTO	S105671921		BRUCEVILLE RD/ CONSUMNES RIVER BLVD		CHMIRS
SACRAMENTO	S108404047		BRUCEVILLE AT DAMASCUS DR.		CHMIRS
SACRAMENTO	S103678348	US BUREAU OF LAND MANAGEMENT	BRUCEVILLE / DESMOND RDS	00000	HAZNET
SACRAMENTO	S105648101		BRUNNER DR. MP 89		CHMIRS
SACRAMENTO	8856839	BTW:ELKHORN + ELVERTA ON POWERLINE RD	BTW:ELKHORN + ELVERTA ON POWERLINE RD		ERNS
SACRAMENTO	S105666201		5140 BUENA VISTA DR CROSS STREET IS MADISON		CHMIRS
SACRAMENTO	S105652209		BUILDING 03006, AEROJET FACILITY		CHMIRS
SACRAMENTO	S106104292	DYNCORP TECHNICAL SERVICES HAN	BUILDING 1023		CA WDS
SACRAMENTO	S105648998		EB BUS 80 EAST OF E ST		CHMIRS
SACRAMENTO	S100219641		BUS 80 - SACTO RIVER BRIDGE		CHMIRS
SACRAMENTO	8873979	E.B. BUSINESS 80 @ WATT AVE N. OFF RAMP	E.B. BUSINESS 80 @ WATT AVE N. OFF RAMP		ERNS
SACRAMENTO	S106397296		BUTTERBALL AT ELKHORN		CHMIRS
SACRAMENTO	S106400921		N. C ST AT 18TH ST.		CHMIRS
SACRAMENTO	S106782280	CAMPUS RECYCLING CENTER	CAL STATE UNIVERSITY		Sacramento Co. CS
SACRAMENTO	S107451351		CAL EXPO PARKING LOT D, SUMP #152		CHMIRS
SACRAMENTO	S105885044		CALPINE AND ALPINE		CHMIRS
SACRAMENTO	S105639704		CALVADOS AVE. AND GREEN ST. INTERSECTION		CHMIRS
SACRAMENTO	S107451363		CALVADOS ST / CAMELLIA ST		CHMIRS
SACRAMENTO	S107451362		CALVADOS AVE. @ CANTALIER ST.		CHMIRS
SACRAMENTO	8722639	CALVEDA CO.	CALVEDA CO.		ERNS
SACRAMENTO	S108403138		WB CALVINE ONRAMP TO SB 99		CHMIRS
SACRAMENTO	S105658602		CAMELLIA, NEAR I5		CHMIRS
SACRAMENTO	S106486535	SACRAMENTO-YOLO MOSQUITO & VECTOR CONTRO DISTRICT	EL CAMINO AVENUE / HIGHWAY BUSINESS 80		SLIC
SACRAMENTO	S106230370	SACRAMENTO-YOLO MOSQUITO & VECTOR CONTRO DISTRICT	EL CAMINO AVE / BUISNESS HIGHWAY. 80, AND SILICA		SLIC
SACRAMENTO	S108401183		EL CAMINO AT MISSION		CHMIRS

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SACRAMENTO	97020690		WEST CAPITAL		HMIRS
SACRAMENTO	96081066		4200 W CAPITAL		HMIRS
SACRAMENTO	96081065		4200 W CAPITAL		HMIRS
SACRAMENTO	96081064		4200 W CAPITAL		HMIRS
SACRAMENTO	95110561		CAPITAL STREET		HMIRS
SACRAMENTO	9999100554		4200 W CAPITAL		HMIRS
SACRAMENTO	9998100302		4200 W CAPITAL		HMIRS
SACRAMENTO	9998100301		4200 W CAPITAL		HMIRS
SACRAMENTO	9900013736		4200 W CAPITAL		HMIRS
SACRAMENTO	8873502	CAPITOL TRUCKS & AUTO REPAIR	CAPITOL TRUCKS & AUTO REPAIR		ERNS
SACRAMENTO	S105668287		N/B CAPITOL CITY FRWY JUST SOUTH CAL EXPO.		CHMIRS
SACRAMENTO	S107452863		NB CAPITOL CITY FREEWAY AT E ST.		CHMIRS
SACRAMENTO	S105882142		CAROL AVE AND TAYLOR ST		CHMIRS
SACRAMENTO	S105629550		4811 CASA ROBLES AVE		CHMIRS
SACRAMENTO	S107451402		CENTER PKWY AT JACINTO		CHMIRS
SACRAMENTO	S108404154		CENTRAL TRANSPORT, 3610 52ND AVE		CHMIRS
SACRAMENTO	8872839	EL CENTRO RD 1 1/2 MI N OF DEL PASO RD	EL CENTRO RD 1 1/2 MI N OF DEL PASO RD		ERNS
SACRAMENTO	S105890225		EL CENTRO RD. / 1 MILE NORTH OF DEL PASO RD.		CHMIRS
SACRAMENTO	S105630171		EL CENTRO ROAD AT ELKHORN BLVD		CHMIRS
SACRAMENTO	S105632131		EL CENTRO RD, NEAR ALVERTA / LEVI RD		CHMIRS
SACRAMENTO	99640032	CA CF#3987KD AMERICAN RIVER 1000 YDS E OF I5 BRIDGE	CA CF#3987KD AMERICAN RIVER 1000 YDS E OF I5 BRIDGE		ERNS
SACRAMENTO	8714621	CHEM LAB @ VALLEY HIGH SCHOOL	CHEM LAB @ VALLEY HIGH SCHOOL		ERNS
SACRAMENTO	8714223	CHEVRON USA	CHEVRON USA		ERNS
SACRAMENTO	S105661243		CHIPPENDALE AND DATE		CHMIRS
SACRAMENTO	8873291	CIRCLE-K CORP	CIRCLE-K CORP		ERNS
SACRAMENTO	S105883300		CITY LIMITS STRIP CLUB / AUBURN BLVD.		CHMIRS
SACRAMENTO	S105689342	CLAY STATION 1200 RES. DEV.	CLAY STATION RDE OF TAVERNOR RD		CA WDS
SACRAMENTO	S106400231		CLOSE TO LOWER SACRAMENTO RD AND GRIDER WAY		CHMIRS
SACRAMENTO	S106391744		COLLEGE OAKS NURSING AND REHAB CTR 4635 COLLEGE OA		CHMIRS
SACRAMENTO	S107451346		CA CONSERVATION CORP. WAREHOUSE @1719 24TH ST		CHMIRS
SACRAMENTO	S106393062		CONTINUOUS SPILL, WB 80 @ H ST, HWY 50 @ 65TH, 65T		CHMIRS
SACRAMENTO	2000022914		CORNER OF SUNRISE BLVD A DOUGL		HMIRS
SACRAMENTO	S105037030	PERKINS PLANT	NW CORNER JACKSON / BRADSHAW		CA WDS
SACRAMENTO	90465174	CORNER OF STOCKTON BLVD. AND FLORIN RD.	CORNER OF STOCKTON BLVD. AND FLORIN RD.		ERNS
SACRAMENTO	S108405156		CORNER OF WINDING WAY AND AUBURN BLVD		CHMIRS
SACRAMENTO	S107453037		NW CORNER OF MAIN AVE AND RAILEY BLVD		CHMIRS
SACRAMENTO	2000022913		CORNER OF SUNRISE BLVD A DOUGL		HMIRS
SACRAMENTO	S103981312	PDC PROPERTIES INC	CORNER OF ROSEVILLE / ANTELOPE	00000	HAZNET
SACRAMENTO	S105640389		COTTAGE AND MORSE COTTAGE PARK		CHMIRS
SACRAMENTO	S106400820		COTTAGE WAY AND WATT AVE		CHMIRS
SACRAMENTO	S108543237	MERCY HOUSING	3420 COUNTRY CLUB		SLIC
SACRAMENTO	96482287	COUNTY HAZMAT ENROUTE	COUNTY HAZMAT ENROUTE		ERNS
SACRAMENTO	8722433	CRYO DYNAMICS	CRYO DYNAMICS		ERNS
SACRAMENTO	8722573	CRYO DYNAMIC	CRYO DYNAMIC		ERNS
SACRAMENTO	8719889	151 DALE AVE	151 DALE AVE		ERNS
SACRAMENTO	S106394404		DEAD END OF 50TH AVE, WITH A CROSS STREET OF VALL		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
SACRAMENTO	2001040177		DEL PASO ROAD		HMIRS
SACRAMENTO	S105634506		DEL PASO ROAD OFFRAMP TO I-5 FREEWAY		CHMIRS
SACRAMENTO	S105669343		DEL PASO RD. AT POWER LINE RD.		CHMIRS
SACRAMENTO	S106230367	SACRAMENTO TRAP SHOOT RANGE**	DEL PASO REGIONAL PARK		SLIC
SACRAMENTO	96040786		918 DEL		HMIRS
SACRAMENTO	95081369		DEL PASO RD		HMIRS
SACRAMENTO	95051255		918 DEL PASS RD		HMIRS
SACRAMENTO	95050080		DEL PASO RD		HMIRS
SACRAMENTO	94110136		DEL PASO ROAD		HMIRS
SACRAMENTO	200111106		DEL PASO ROAD		HMIRS
SACRAMENTO	2000025775		365 DEVELOPMENT DR		HMIRS
SACRAMENTO	2000025776		365 DEVELOPMENT DR		HMIRS
SACRAMENTO	S105649250		DISCOVERY PARK UNDER I-5		CHMIRS
SACRAMENTO	S106389951		DISCOVERY PARK, RIVERBANK MARINA 1371 GARDEN HIGHW		CHMIRS
SACRAMENTO	S107451599		DISCOVERY PARK, TISCORNIA BEACH AREA		CHMIRS
SACRAMENTO	S105630259		DOUGLAS ROAD AT AEROJET GATE		CHMIRS
SACRAMENTO	S105663686		DOWNTOWN SACRAMENTO		CHMIRS
SACRAMENTO	S106391674		DRAINAGE CANAL ADJACENT TO INTERSECTION OF ELINORE		CHMIRS
SACRAMENTO	A100282138	CALPINE-SUTTER METER STATION	S. DREXLER RD. & SACTO. LEVEE		AST
SACRAMENTO	S107451628		DUDLEY BLVD AT JAMES WAY		CHMIRS
SACRAMENTO	S108405814		DWIGHT RD AT PORTOSINO RD.		CHMIRS
SACRAMENTO	S105629651		EAGEL'S NEST RD AT GRANTLINE RD		CHMIRS
SACRAMENTO	91240375	EAGLES NEST RD 200' S OF FLORIN RD	EAGLES NEST RD 200' S OF FLORIN RD		ERNS
SACRAMENTO	90189400	1/4 MI EAST OF SACRAMENTO ON KEIFER RD	1/4 MI EAST OF SACRAMENTO ON KEIFER RD		ERNS
SACRAMENTO	S107451679		EASTBOUND HWY. 50 TO THE SOUTHBOUND HWY. 99 CONNE		CHMIRS
SACRAMENTO	S107451677		EASTBOUND 50 UNDER THE 99 OVER CROSS		CHMIRS
SACRAMENTO	876056	I-50 EASTBOUND, BETWEEN HAWE AVE & 65TH ST.,	I-50 EASTBOUND, BETWEEN HAWE AVE & 65TH ST.,		ERNS
SACRAMENTO	S106389963		ON EDGE OF AMERICAN RIVER ON NORTH EAST END OF M		CHMIRS
SACRAMENTO	2007410086	82020 ELDER CREEK ROAD	82020 ELDER CREEK ROAD		HMIRS
SACRAMENTO	S105662823		ELDER CREEK ROAD CROSSING.		CHMIRS
SACRAMENTO	S105675357		ELDER CREEK RD. CROSS OF SKY CREEK		CHMIRS
SACRAMENTO	91236881	ELK HORN BLVD & RIO LINDA AT RR CROSSING	ELK HORN BLVD & RIO LINDA AT RR CROSSING		ERNS
SACRAMENTO	8720501	ELK GROVE@FLORIN RD/N OF ELKGROVE BLVD	ELK GROVE@FLORIN RD/N OF ELKGROVE BLVD		ERNS
SACRAMENTO	S105664976		ELVAS ST. AT MCKINLEY		CHMIRS
SACRAMENTO	S105651427		END OF BALLENTINE ST NORTH OF FRUITRIDGE RD.		CHMIRS
SACRAMENTO	8713271	END:HEDGE AVE NR:FRUITRIDGE ST	END:HEDGE AVE NR:FRUITRIDGE ST		ERNS
SACRAMENTO	S106400270		ENTERPRISE BLVD AT UPRR CROSSING (AT SEAPORT)		CHMIRS
SACRAMENTO	87463629	ENTERPRISE BLVD-WEST SACRAMENTO	ENTERPRISE BLVD-WEST SACRAMENTO		ERNS
SACRAMENTO	S105656221		ENTIRE 2200 BLOCK OF ROANOAKE		CHMIRS
SACRAMENTO	S106397902		ERICSON AT EL CAMINO		CHMIRS
SACRAMENTO	S105665689		ERLEWINE CIR. ACCESS POINT		CHMIRS
SACRAMENTO	S105630190		EXCELSIOR RD AND JACKSON HWY		CHMIRS
SACRAMENTO	S105636571		6830 EXCELSOR		CHMIRS
SACRAMENTO	S105887502		EXPO PKWY. AT SLOBE AVE.		CHMIRS
SACRAMENTO	S105885805		EXPOSITION AT BUSINESS 80 HWY		CHMIRS
SACRAMENTO	S106389310		FAIROAK BRIDGE AT CARLSON / H ST, ON EAST SIDE O		CHMIRS

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SACRAMENTO	S106392416		1500 FEET WEST OF DIABLO / ROSEVILLE RD NEAR RAI		CHMIRS
SACRAMENTO	S106395309		20 FEET UPSTREAM FROM THE H ST. BRIDGE ON THE CSUS		CHMIRS
SACRAMENTO	91217741	3391 FITZGERALD INDUSTRIAL SECTION	3391 FITZGERALD INDUSTRIAL SECTION		ERNS
SACRAMENTO	S108406443		3RD FLOOR @ 8800 CAL CENTER DR.		CHMIRS
SACRAMENTO	S105653340		FLORIN RD AT 29TH ST		CHMIRS
SACRAMENTO	S105634538		6401 FLORIN /PERKINS		CHMIRS
SACRAMENTO	S105662692		FLORIN ROAD AND 29TH STREET		CHMIRS
SACRAMENTO	S108245966	FLORIN MALL	FLORIN RD BETWEEN STOCKTON BLVD / 65TH ST		SLIC
SACRAMENTO	S108402091		FLORIN PERKINS RD AND ROVANA CIRCLE		CHMIRS
SACRAMENTO	S108406490		FLORIN RD AT 29TH ST		CHMIRS
SACRAMENTO	S107451823		FLORIN RD. @ BOWLING DR.		CHMIRS
SACRAMENTO	S107451822		FLORIN PERKINS RD. AT JACKSON HWY.		CHMIRS
SACRAMENTO	S105669209		FLORIN-PERKINS ROAD AND JACKSON ROAD	UNK	CHMIRS
SACRAMENTO	S105660731		FLOSOM BLD / POWER INN RD		CHMIRS
SACRAMENTO	S105025965	SACRAMENTO HOUSING & REDE	492125 FOLSOM		Cortese
SACRAMENTO	S105644240		5700 FOLSOM BLVD. BEHIND WELLS FARGO BANK		CHMIRS
SACRAMENTO	S100280724		FOLSOM BLVD. / INLAND		CHMIRS
SACRAMENTO	S108406415		FOLSOM AND IRON POINT RD		CHMIRS
SACRAMENTO	S107536641		8383 FOLSOM BLVD (RALEY SHOPPING CTR)	0	CDL
SACRAMENTO	S108406395		FOLSOM, BLVD MPM 6.87 DOT 753532H		CHMIRS
SACRAMENTO	8864793	FOOT BRIDGE AT SACRAMENTO UNIVERSITY CROSSING AMERICAN RIVER	FOOT BRIDGE AT SACRAMENTO UNIVERSITY CROSSING AMERICAN RIVER		ERNS
SACRAMENTO	S105883695		FRANCHISE TAX BOARD/9645 BUTTERFIELD WAY		CHMIRS
SACRAMENTO	1009630447	PACIFIC GAS & ELECTRIC CO	FRANKLIN BLVD. BET. 20TH & 21ST AVE.		DOT OPS
SACRAMENTO	S105635150		FREEPORT AND FLORIN RD		CHMIRS
SACRAMENTO	S105657937		FREEPORT AT EXECUTIVE AIRPORT		CHMIRS
SACRAMENTO	91466316	FREEPORT MARINA	FREEPORT MARINA		ERNS
SACRAMENTO	91201773	FREEPORT MARINA	FREEPORT MARINA		ERNS
SACRAMENTO	S100279199		FREEPORT/STONE CREST		CHMIRS
SACRAMENTO	S106394030		FRESNO SUBDIVISION, MPM 44.8 AT ELDER CREEK RD/POW		CHMIRS
SACRAMENTO	S105647370		FRONT / Q OLD TOWN		CHMIRS
SACRAMENTO	S106230378	SACRAMENTO HOUSING & REDEVELOPMENT AGEN (SHRA),	401 FRONT ST (1920) / T ST		RESPONSE, SLIC, ENVIROSTOR
SACRAMENTO	S106230377	SHRA I -5 SITES	30 FRONT ST		SLIC
SACRAMENTO	S108405177		2799 FRONT STREET AT THE MILLER PARK MARINA ON THE		CHMIRS
SACRAMENTO	S107022530	FRUITRIDGE VISTA WATER COMPANY	FRUITRIDGE RD		Sacramento Co. CS
SACRAMENTO	S106599808	CALTRANS	FRUITRIDGE RD/HWY 99		Sacramento Co. CS
SACRAMENTO	S105883220		FRUITRIDGE RD. AT FRANKLIN BLVD.		CHMIRS
SACRAMENTO	S105644331		8201 FRUITRIDGE RD PROCTOR / GAMBLE		CHMIRS
SACRAMENTO	S106393974		FRUITRIDGE YARD, TRACK 704, FRUITRIDGE AT POWER IN		CHMIRS
SACRAMENTO	92259006	FRUITRIDGE RD, BETWEEN HEDGE & SO WATT AVE	FRUITRIDGE RD, BETWEEN HEDGE & SO WATT AVE		ERNS
SACRAMENTO	S108404740		FRUITRIDGE RD. AND STOCKTON BLVD.		CHMIRS
SACRAMENTO	S108404689		8201 FRUITRIDGE ROAD / STORM POND		CHMIRS
SACRAMENTO	S105630653		8201 FRUTIRIDGE RD		CHMIRS
SACRAMENTO	S105630432		8550 FRUTIRIDGE RD.		CHMIRS
SACRAMENTO	90169613	GARFIELD AVE.	GARFIELD AVE.		ERNS
SACRAMENTO	S107451878		GARFIELD AVE AND MADISON AVE		CHMIRS

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SACRAMENTO	90465555	GARFIELD AVE.	GARFIELD AVE.		ERNS
SACRAMENTO	2003647277	1501 N. GATE BLVD	1501 N. GATE BLVD		ERNS
SACRAMENTO	2005621642	4747 NORTH GATE BLVD	4747 NORTH GATE BLVD		ERNS
SACRAMENTO	91218665	NORTH GATE BLVD AT NORTH MARKET BLVD	NORTH GATE BLVD AT NORTH MARKET BLVD		ERNS
SACRAMENTO	S105663563		GATEWAY PARK BLVD, AT STADIUM BLVD		CHMIRS
SACRAMENTO	93320542	GERBER AND BRADSHAW ROAD	GERBER AND BRADSHAW ROAD		ERNS
SACRAMENTO	8872947	GOLD TAILING + SUN COULTER RDS	GOLD TAILING + SUN COULTER RDS		ERNS
SACRAMENTO	A100301991	GORE ROAD	9687 GORE ROAD		AST
SACRAMENTO	S106104299	TRANS DEPT	1400 GRAND AVE # B		CA WDS
SACRAMENTO	S105646264		GRANT HIGH SCHOOL 1400 GRAND AVE		CHMIRS
SACRAMENTO	S105025967	KIEFER ROAD- CLASS III SW	GRANTLINE / KEIFER BLVD		Cortese
SACRAMENTO	S105658693		GRANTLINE RD AND WATERMAN RD		CHMIRS
SACRAMENTO	S105652729		GREENBACK AND SAN JUAN		CHMIRS
SACRAMENTO	S105636818		GREENBACK LANE - BETWEEN ALMOND AND ILLINOIS		CHMIRS
SACRAMENTO	8872945	GRUA-HALL CHEMICAL CO	GRUA-HALL CHEMICAL CO		ERNS
SACRAMENTO	S105672907		GUN ROAD IN MACKENZIE GLEN CT.		CHMIRS
SACRAMENTO	S100280270		2701 HARBOR VIEW DRIVE MILLER PARK		CHMIRS
SACRAMENTO	S104795653	CITY OF SACRAMENTO	2701 HARBOR VIEW DR		Sacramento Co. CS
SACRAMENTO	98443693	HAZEL AND HWY 50	HAZEL AND HWY 50		ERNS
SACRAMENTO	93319511	HAZEL AND ELM	HAZEL AND ELM		ERNS
SACRAMENTO	S107451993		HITCHCOCK WAY AND VALLEY HIGH DR		CHMIRS
SACRAMENTO	8713153	@ HOMESTEAD SAV + LOAN	@ HOMESTEAD SAV + LOAN		ERNS
SACRAMENTO	S105661545		HOWE AVE BRIDGE STORM PUMP STATION, SUMP 91		CHMIRS
SACRAMENTO	S105676737		WB HWY 50 AT MATHER FIELD		CHMIRS
SACRAMENTO	91216907	NB HWY 99 NEAR 47TH ST. OVERPASS	NB HWY 99 NEAR 47TH ST. OVERPASS		ERNS
SACRAMENTO	S105645917		EB HYW 16 JUST EAST OF HEDGE ROAD		CHMIRS
SACRAMENTO	S105884688		NB I -5 NORTH OF LAGUNA BLVD.		CHMIRS
SACRAMENTO	S105649872		SB I-5 JUST SOUTH OF POCKET/MEADOWVIEW ROAD.		CHMIRS
SACRAMENTO	S105884355		SB I-5 AT J ST.		CHMIRS
SACRAMENTO	S105677745		NB I-5 JUST NORTH OF SEAMUS.		CHMIRS
SACRAMENTO	S105645772		NB I-5 TO EB I-50		CHMIRS
SACRAMENTO	S105641616		NB I-5 MILEPOST 19.8		CHMIRS
SACRAMENTO	S105675201		NB I-5 N/O SUTTERVILLE		CHMIRS
SACRAMENTO	S105672889		NB I-5 JSO TWIN CITIES RD.		CHMIRS
SACRAMENTO	S106396451		NB I-5 AT SEAMAS		CHMIRS
SACRAMENTO	S100280197		N/B I-5 SOUTH OF RIVERBEND		CHMIRS
SACRAMENTO	S108405253		NB I-5 JUST NORTH OF GARDEN HIGHWAY		CHMIRS
SACRAMENTO	S105663791		NB I-5, NORTH OF SEAMAS AVE		CHMIRS
SACRAMENTO	S105645806		WB I-80 AT MADISON AVE		CHMIRS
SACRAMENTO	S105645803		WB I-80 AT MADISON AVE.		CHMIRS
SACRAMENTO	S105674141		EB I-80 AT NORTHGATE BLVD		CHMIRS
SACRAMENTO	S106396490		WB I-80 EAST OF WINTERS ST.		CHMIRS
SACRAMENTO	S106401084		WB I-80 AT NORTHGATE, #4 LANE.		CHMIRS
SACRAMENTO	91223756	EB I-80 1 MI EAST OF NORTHGATE	EB I-80 1 MI EAST OF NORTHGATE		ERNS
SACRAMENTO	S105653629		AT I5 AND FRUITRIDGE RD		CHMIRS
SACRAMENTO	S105652988		NB I5 NEAR AIRPORT BLVD		CHMIRS
SACRAMENTO	S105663987		SB I5 AT WB FLORIN RD.		CHMIRS

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SACRAMENTO	S105659564		NB I5 AT DEL PASO ROAD		CHMIRS
SACRAMENTO	S105668554		NB I5 AT J STREET		CHMIRS
SACRAMENTO	S105664951		SB I5 AT POCKET ROAD		CHMIRS
SACRAMENTO	S107452158		INT OF N PARK DR / NORTHBOROUGH (NATOMAS AREA)		CHMIRS
SACRAMENTO	S105630038		INTERNATIONAL / ZINFINDEL RD		CHMIRS
SACRAMENTO	S105655546		INTERSECTION OF BELL ST AND RIO LINDA BLVD		CHMIRS
SACRAMENTO	S105630827		INTERSECTION OF MARTIN LUTHER KING AND 49TH AVE		CHMIRS
SACRAMENTO	S105632217		INTERSECTION OF EXCELSOR AND GERBER RD		CHMIRS
SACRAMENTO	96040776		INTRANSIT		HMIRS
SACRAMENTO	S106400127		7TH ST, JABOOM ST		CHMIRS
SACRAMENTO	S107450959		935 JOHNSER WAY, #220 (THE TERRA BELLA APARTMENTS)		CHMIRS
SACRAMENTO	S105664567		SB99 JSO FLORIN RD		CHMIRS
SACRAMENTO	2001011132		JUNCTON HWY 99 + HWY 50		HMIRS
SACRAMENTO	S106394855		JUST OFF OF ELVIS ST.ON THE SACRAMENTO SUBDIVISIO		CHMIRS
SACRAMENTO	S107452215		JUST NORTH OF THE GUY WEST BRIDGE, SACRAMENTO STAT		CHMIRS
SACRAMENTO	9900014594		3516 KIESSIE AVE		HMIRS
SACRAMENTO	2007422160	3156 KIESSIG AVE	3156 KIESSIG AVE		HMIRS
SACRAMENTO	2007421578	3615 KIESSIG AVE	3615 KIESSIG AVE		HMIRS
SACRAMENTO	2007411767	3816 KIESSIG	3816 KIESSIG		HMIRS
SACRAMENTO	S105645523		KIESSIG AVE ATT 47TH AVE		CHMIRS
SACRAMENTO	9900016189		KIESSIG AVE		HMIRS
SACRAMENTO	9900014560		KIESSIG VE		HMIRS
SACRAMENTO	S105651260		KILGORE RD. QUARY TO WHITEROCK RD.		CHMIRS
SACRAMENTO	S108403867		KINDER MORGAN BRADSHAW FACILITY @ 2901 BRADSHAW RD		CHMIRS
SACRAMENTO	S104586856	PACIFIC BELL	3540 KINS WAY		CA WDS
SACRAMENTO	S105655199		LAGUNA BLVD BET HARBOR POINT DR AND I5		CHMIRS
SACRAMENTO	96486896	LAIDLAW TO C/U	LAIDLAW TO C/U		ERNS
SACRAMENTO	S105639921		7405 LARCHMONT CHLORINE STATION		CHMIRS
SACRAMENTO	S105670373		LATHAN AT MONROE		CHMIRS
SACRAMENTO	S105665090		LATHROP RD NEAR COMMERCE CIRCLE, AT THE LEVEE		CHMIRS
SACRAMENTO	S107452329		LAUREN / FLORIN PERKINS (VALERO ROAD GAS STATION		CHMIRS
SACRAMENTO	S105882182		5300 E. LEVEE RD. CROSS OF MAIN AVE.		CHMIRS
SACRAMENTO	S105674112		EAST LEVEE RD AT SORRENTO RD.		CHMIRS
SACRAMENTO	S100280729		EAST LEVEE RD NORTH OF SORENTA RD.		CHMIRS
SACRAMENTO	S107452339		LEXINGTON AT OLIVERA		CHMIRS
SACRAMENTO	8874630	LIGHT 29 OFF POCKET RD SW SACRAMENTO	LIGHT 29 OFF POCKET RD SW SACRAMENTO		ERNS
SACRAMENTO	2001011267		6733 LINDBERG DRIVE		HMIRS
SACRAMENTO	97060951		6733 LINDBERG DR		HMIRS
SACRAMENTO	2004070208		6733 LINDBERG DR		HMIRS
SACRAMENTO	2001239		6733 LINDBERG DRIVE		HMIRS
SACRAMENTO	2000091191		6733 LINDEBERG DRIVE		HMIRS
SACRAMENTO	99613433	LINE 5 OFF HWY 50 AND HAZEL	LINE 5 OFF HWY 50 AND HAZEL		ERNS
SACRAMENTO	S105655825		LONGVIEW DR AT EB I80		CHMIRS
SACRAMENTO	2004728905	LOT A CAL EXPO	LOT A CAL EXPO		ERNS
SACRAMENTO	8874398	LUMBERJACK PARKING LOT/838 FLORIN RD	LUMBERJACK PARKING LOT/838 FLORIN RD		ERNS
SACRAMENTO	2001040230		MACK ROAD		HMIRS
SACRAMENTO	S105662662		MACK RD AT HWY 99		CHMIRS

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SACRAMENTO	S105668652		MACK ROAD AT LA MANCHA		CHMIRS
SACRAMENTO	S105664654		E/B MACK ONRAMP TO S/B 99		CHMIRS
SACRAMENTO	S108403574		MACK RD APPROX 1/4 MI N OF FRANKLIN		CHMIRS
SACRAMENTO	200111127		MACK ROAD		HMIRS
SACRAMENTO	93319500	MACY STORE AT 4TH AND L ST	MACY STORE AT 4TH AND L ST		ERNS
SACRAMENTO	S105637118		5001 MADISON CROSS OF HEMLOCK		CHMIRS
SACRAMENTO	S103427264	SAC COUNTY ARDEN GOLD PUMP ST	MAIN AVE		Sacramento Co. CS
SACRAMENTO	S107452419		MAIN AT PELL		CHMIRS
SACRAMENTO	S103679224	PACIFIC BELL	MANHOLE 235	00000	HAZNET
SACRAMENTO	S103679223	PACIFIC BELL	MANHOLE 234	00000	HAZNET
SACRAMENTO	S105638339		EB MARCONI JUST EAST OF WALNUT		CHMIRS
SACRAMENTO	S105663647		MARCONI AVE AND AUBURN, MPM 95.5		CHMIRS
SACRAMENTO	S106103568	SACTO SUBURBAN WD PROJECT	3701 MARCONI AVE 100		CA WDS
SACRAMENTO	93309333	4626 MARGARITA	4626 MARGARITA		ERNS
SACRAMENTO	S105634444		NORTH MARKET AND SIERRA POINTE 1346 NORTH MARKET		CHMIRS
SACRAMENTO	91080511		NORTH MARKET BLVD		HMIRS
SACRAMENTO	S105672678		88.5 MARTINEZ SUB DIVISION		CHMIRS
SACRAMENTO	S105667569		MARTINEZ SUBDIVISION MPM 88.9		CHMIRS
SACRAMENTO	S105645848		3717 MARYSVILLE BLVD KAY'S AUTOMOTIVE SERVICES		CHMIRS
SACRAMENTO	S107022531	MATHER AFB -JP4 LINE REMOVAL	0 MATHER FIELD RD		Sacramento Co. CS
SACRAMENTO	2003127866		MATHER AIRPORT		HMIRS
SACRAMENTO	S102798684	HOUSING AUTHORITY OF COUNTY OF SAC.	1705 MATHER AIRFORCE FIELD	00000	HAZNET
SACRAMENTO	S105887631		MAYHEW AND I-5		CHMIRS
SACRAMENTO	S106397537		MAYHEW @ JACKSON		CHMIRS
SACRAMENTO	S108405236		MAYHEW AND FLORIN		CHMIRS
SACRAMENTO	S104586485	MCCLELLAN AFB TF6-38	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586445	MCCLELLAN AFB BLDG 1048D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586434	MCCLELLAN AFB BLDG 756C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586389	MCCLELLAN AFB BLDG 252A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586388	MCCLELLAN AFB BLDG 251	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586386	MCCLELLAN AFB BLDG 26B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586385	MCCLELLAN AFB BLDG 26A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586384	MCCLELLAN AFB BLDG 22B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104970706	MCCLELLAN AFB BLDG 351C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	1003058614	MCCLELLAN AFB BLDG 332	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104795607	MCCLELLAN AFB TF2-02	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104795606	MCCLELLAN AFB TF2-01	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782299	MCCLELLAN AFB TF4-04	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782298	MCCLELLAN AFB TF3-07	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782297	MCCLELLAN AFB TF2-05	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782296	MCCLELLAN AFB BLDG 5365C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782295	MCCLELLAN AFB BLDG 5365A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782294	MCCLELLAN AFB BLDG 1048F	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782292	MCCLELLAN AFB BLDG 756B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106782293	MCCLELLAN AFB BLDG 900D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S105648984		MCCLELLAN AFB, BLDG 243G		CHMIRS
SACRAMENTO	A100109103	MCCLELLAN GAS TURBINE	MCCLELLAN AFB		AST

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SACRAMENTO	S105630360		MCCLELLAN AFB - BUILDING 692		CHMIRS
SACRAMENTO	S104586489	MCCLELLAN AFB TF6-42	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586488	MCCLELLAN AFB TF6-41	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586487	MCCLELLAN AFB TF6-40	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586486	MCCLELLAN AFB TF6-39	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586484	MCCLELLAN AFB TF6-37	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586423	MCCLELLAN AFB BLDG 657C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586422	MCCLELLAN AFB BLDG 657B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586421	MCCLELLAN AFB BLDG 657A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586420	MCCLELLAN AFB BLDG 655B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586419	MCCLELLAN AFB BLDG 655A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586418	MCCLELLAN AFB BLDG 640	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586417	MCCLELLAN AFB BLDG 614	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586416	MCCLELLAN AFB BLDG 603	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586415	MCCLELLAN AFB BLDG 482E	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586414	MCCLELLAN AFB BLDG 482D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586413	MCCLELLAN AFB BLDG 482C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586412	MCCLELLAN AFB BLDG 482B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586411	MCCLELLAN AFB BLDG 482A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586410	MCCLELLAN AFB BLDG 482	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586450	MCCLELLAN AFB BLDG 5365B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586446	MCCLELLAN AFB BLDG 1048E	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586431	MCCLELLAN AFB BLDG 699	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586430	MCCLELLAN AFB BLDG 659F	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586429	MCCLELLAN AFB BLDG 659E	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586428	MCCLELLAN AFB BLDG 659D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586427	MCCLELLAN AFB BLDG 659C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586426	MCCLELLAN AFB BLDG 659B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586425	MCCLELLAN AFB BLDG 659A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586424	MCCLELLAN AFB BLDG 657D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S108405781		MCCLELLAN PARK (AIRPORT) 5816 KELLY WAY		CHMIRS
SACRAMENTO	S104586474	MCCLELLAN AFB TF3-12	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586473	MCCLELLAN AFB TF3-11	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586472	MCCLELLAN AFB TF3-10	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586471	MCCLELLAN AFB TF3-09	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586465	MCCLELLAN AFB TF2-04	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586464	MCCLELLAN AFB TF2-03	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586483	MCCLELLAN AFB TF6-33	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586482	MCCLELLAN AFB TF5-03	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586481	MCCLELLAN AFB TF5-02	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586480	MCCLELLAN AFB TF5-01	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586478	MCCLELLAN AFB TF4-03	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586475	MCCLELLAN AFB TF3-13	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586476	MCCLELLAN AFB TF4-01	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586398	MCCLELLAN AFB BLDG 347	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586397	MCCLELLAN AFB BLDG 344	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586395	MCCLELLAN AFB BLDG 329	MCCLELLAN AFB		Sacramento Co. CS

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SACRAMENTO	S104586394	MCCLELLAN AFB BLDG 252F	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586393	MCCLELLAN AFB BLDG 252E	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586392	MCCLELLAN AFB BLDG 252D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586390	MCCLELLAN AFB BLDG 252B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586444	MCCLELLAN AFB BLDG 1048C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586443	MCCLELLAN AFB BLDG 1048B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586439	MCCLELLAN AFB BLDG 900C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586438	MCCLELLAN AFB BLDG 900B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586437	MCCLELLAN AFB BLDG 900A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586436	MCCLELLAN AFB BLDG 870	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586435	MCCLELLAN AFB BLDG 766	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586432	MCCLELLAN AFB BLDG 756A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586409	MCCLELLAN AFB BLDG 431	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586408	MCCLELLAN AFB BLDG 429D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586407	MCCLELLAN AFB BLDG 429C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586405	MCCLELLAN AFB BLDG 429A	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586404	MCCLELLAN AFB BLDG 367D	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586403	MCCLELLAN AFB BLDG 367C	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S104586402	MCCLELLAN AFB BLDG 367B	MCCLELLAN AFB		Sacramento Co. CS
SACRAMENTO	S106104266	ALL FORD AUTO RECYCLING	7050 MCCOMBER ST 9163838694		CA WDS
SACRAMENTO	S105642331		623 MCNAIR CIRCLE (METRO AIRPORT)		CHMIRS
SACRAMENTO	8874316	MEADOWVIEW AND POCKET	MEADOWVIEW AND POCKET		ERNS
SACRAMENTO	S105633225		MEED RAOAD, 1 MILE WEST OF IONE ROAD		CHMIRS
SACRAMENTO	90168616	MEMORIAL HOSPITAL	MEMORIAL HOSPITAL		ERNS
SACRAMENTO	8873408	MERVYN'S	MERVYN'S		ERNS
SACRAMENTO	S105890221		MEYHEW DRAINAGE CANAL, 150' SO. AMERICAN RIVER		CHMIRS
SACRAMENTO	S105636940		MICHIGAN BARD RD NORTH OF SR16, JACKSON HIGHWAY		CHMIRS
SACRAMENTO	S106104281	US ARMY RESERVES 63RD RSC BT C	6300 MIDWAY ST BLDG 655		CA WDS
SACRAMENTO	90158766	MILE POST 85 ON SOUTHERN PACIFIC RAILROAD LINE	MILE POST 85 ON SOUTHERN PACIFIC RAILROAD LINE		ERNS
SACRAMENTO	S105883024		MILE POST 96, MARTINEZ SUBDIVISION		CHMIRS
SACRAMENTO	S105675752		MILE POST 44.3, POWER INN / ELDER CREEK		CHMIRS
SACRAMENTO	S105671724		MILE POST 89.5 ON THE HOLLAND INDUSTRIAL LEAD		CHMIRS
SACRAMENTO	S105670357		MILE POST 92.5 MARTINEZ SUB DIVISION		CHMIRS
SACRAMENTO	S106400287		MILE POST 131.80 SACRAMENTO SUB DIV.		CHMIRS
SACRAMENTO	S106396799		MILE POST 135 AT THE SACRAMENTO DEPOT		CHMIRS
SACRAMENTO	S100280611		.5 MILE NORTH OF GERBER ON EXCELSIOR		CHMIRS
SACRAMENTO	S100279729		1/2 MILE S. OF HWY 50 ON SCOTT RD.		CHMIRS
SACRAMENTO	S108404308		MILE POST 88.9		CHMIRS
SACRAMENTO	S107452546		MILE POST 43.3 FRESNO SUB DIV.		CHMIRS
SACRAMENTO	S106486568	UNION PACIFIC RAILROAD - RAILROAD RIGHT-OF-WAY	MILEPOST 94.3 TO MILEPOST 119.4		SLIC
SACRAMENTO	2006784820	MILEPOST 6.41	MILEPOST 6.41		ERNS
SACRAMENTO	S105982603	UNION PACIFIC RAILROAD - RAILROAD RIGHT-OF-WAY	MILEPOST 94.3 TO MILEPOST 119.4		SLIC
SACRAMENTO	S108405176		MILLER PARK MARINA, 2799 FRONT ST.		CHMIRS
SACRAMENTO	S108404035		MILLER PARK MARINA/ 2710 RAMP WAY/ SLIP F16		CHMIRS

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SACRAMENTO	S107452584		MILLER PARK MARINA		CHMIRS
SACRAMENTO	91205165	MILLER PARK MARINA	MILLER PARK MARINA		ERNS
SACRAMENTO	S107452593		MISSION AV SOUTH OF WHITNEY		CHMIRS
SACRAMENTO	S106230372	EL MONTE AREA INVESTIGATION	EL MONTE AVE, ACOMA ST AND BARSTOW ST		SLIC
SACRAMENTO	S105654142		MOREY AVE AND WESTERN AVE		CHMIRS
SACRAMENTO	99640195	MOUTH OF SEVEN SLOUGH	MOUTH OF SEVEN SLOUGH		ERNS
SACRAMENTO	S105653813		MPM 134 - BETWEEN 26TH AVE AND FRUITRIDGE		CHMIRS
SACRAMENTO	S105884400		MPM 175.6 SACRAMENTO SUBDIVISION		CHMIRS
SACRAMENTO	S105668345		MPM 139.4		CHMIRS
SACRAMENTO	S106395900		MPM 4.0 HOLLAND INDUSTRIAL LEAD		CHMIRS
SACRAMENTO	S106398543		MPM 99.3 MARTINEZ SUBDIVISION		CHMIRS
SACRAMENTO	S106398528		MPM 43.7 FRESNO SUBDIVISION		CHMIRS
SACRAMENTO	S106400342		MPM 39.43 ON THE FRESNO SUB		CHMIRS
SACRAMENTO	S108401501		MPM 43.32 FRESNO SUB		CHMIRS
SACRAMENTO	S107452749		MPM 40.64 FRESNO SUB		CHMIRS
SACRAMENTO	S107452705		MPM 138.6 SACRAMENTO SUBDIVISION		CHMIRS
SACRAMENTO	S107539467		MYRTLE AVE / WATT AVE (INTERSECTION)	0	CDL
SACRAMENTO	2007401287	N/A	N/A		HMIRS
SACRAMENTO	8712274	NAME NOT GIVEN	NAME NOT GIVEN		ERNS
SACRAMENTO	8873661	NATIONAL SIERRA COOPERATIVE	NATIONAL SIERRA COOPERATIVE		ERNS
SACRAMENTO	S105650952		1045 NATIONAL DRIVE # 12 - A WHAREHOUSE		CHMIRS
SACRAMENTO	S105639705		NATIONAL DRIVE AT NORTH MARKET BLVD		CHMIRS
SACRAMENTO	S105674946		NB-I-5 JNO OF EB I-80		CHMIRS
SACRAMENTO	S105885496		NEAR CITY DOCKS AT OLD SACRAMENTO		CHMIRS
SACRAMENTO	S105658160		NEAR ELVAS TOWER - SUNRISE BLVD / FOLSOM BLVD.		CHMIRS
SACRAMENTO	S105641831		NEAR THE "I" STREET BRIGE, SACRAMENTO RIVER		CHMIRS
SACRAMENTO	S105665965		NEAR ROSEVILLE ROAD AND LONGVIEW ROAD		CHMIRS
SACRAMENTO	S106398514		NEAR MPM 89.5		CHMIRS
SACRAMENTO	S106398296		NEXT DOOR TO 3138 ACADEMY WAY		CHMIRS
SACRAMENTO	2006816191	NONE	NONE		ERNS
SACRAMENTO	S106400239		3/10 MI NORTH OF DEL PASO OVERPASS		CHMIRS
SACRAMENTO	99648079	NORTHBOUND STATE HIGHWAY 99 AT 12TH ST	NORTHBOUND STATE HIGHWAY 99 AT 12TH ST		ERNS
SACRAMENTO	S105658094		NORTHBOUND I5 NORTH OF 43RD AVE.		CHMIRS
SACRAMENTO	S105632297		NORTHBOUND SR51 NEAR CAL EXPO		CHMIRS
SACRAMENTO	S105634224		NORTHBOUND I-5 SOUUTH OF HOOD FRANKLIN		CHMIRS
SACRAMENTO	2001553324	I-5 NORTHBOUND	I-5 NORTHBOUND	0	ERNS
SACRAMENTO	S105651492		4135 NORTHGATE BLVD - RAND SCIENTIFIC		CHMIRS
SACRAMENTO	S105887533		NORWOOD AVE. AT SOUTH AVE.		CHMIRS
SACRAMENTO	8873055	NORWOOD & BELL STS	NORWOOD & BELL STS		ERNS
SACRAMENTO	96496240	NOT SECURED / CURRENT CARRIED SHEEN AWAY / STATE FISH & GAME	NOT SECURED / CURRENT CARRIED SHEEN AWAY / STATE FISH & GAME		ERNS
SACRAMENTO	S107453041		OAK HOLLOW AT ROSEVILLE RD		CHMIRS
SACRAMENTO	S105643620		550 OANPASAS		CHMIRS
SACRAMENTO	8856838	E OF POWERLINE ON BAYOU	E OF POWERLINE ON BAYOU		ERNS
SACRAMENTO	S105669383		WEST OF BLDG 475 MCCLELLAN AFB		CHMIRS
SACRAMENTO	S105669062		W OF BLDG 702 ON MCCLELLAN AFB		CHMIRS
SACRAMENTO	8713525	OFF OF EAST LEVEE RD AND EL VERTA	OFF OF EAST LEVEE RD AND EL VERTA		ERNS

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SACRAMENTO	S106394837		OFF RAMP EB I80 AT MADISON, CLOSEST CITY SACRAMENT		CHMIRS
SACRAMENTO	S106390426		OLD SACRAMENTO RIVER LIGHT #9, LAT 38,28,24N LON 1		CHMIRS
SACRAMENTO	99642466	OLD SACRAMENTO RIVER ACROSS FROM ISLETON	OLD SACRAMENTO RIVER ACROSS FROM ISLETON		ERNS
SACRAMENTO	S108404376		ORANGEGROVE AVE CROSSING		CHMIRS
SACRAMENTO	S102445945	LYON'S EXPRESS	OXFORM LN		Sacramento Co. CS
SACRAMENTO	S105882615		W. PACIFIC AT DEEDLE ST.		CHMIRS
SACRAMENTO	87464047	PACIFIC INT'L EXPRESS(PIE)	PACIFIC INT'L EXPRESS(PIE)		ERNS
SACRAMENTO	S105887106		PALM STREET CROSSING AT THE UPRR TRACKS		CHMIRS
SACRAMENTO	S105653589		EAST PARK WAY AND FLORIN ROAD		CHMIRS
SACRAMENTO	S107536246		7626 PARK RIVIERA DR	0	CDL
SACRAMENTO	S107451011		A PARKWAY AT CENTER PARKWAY		CHMIRS
SACRAMENTO	S105630869		1434 DE PASO BLVD		CHMIRS
SACRAMENTO	95120540		918 EL PASO RD		HMIRS
SACRAMENTO	S105669168		918 EL PASO ROAD	UNK	CHMIRS
SACRAMENTO	2000518592	918 EL PASO ROAD	918 EL PASO ROAD	0	ERNS
SACRAMENTO	S104970708	CAPITAL DELIVERY	4660 PELL DR A		Sacramento Co. CS
SACRAMENTO	S102811901	ANYTIME POWER SPORTS & EQUIP	6951 PERFORMANCE DRIVE	00000	HAZNET
SACRAMENTO	S106400951		PINELL AT HARRIS		CHMIRS
SACRAMENTO	S105637214		PLAM TREE COURT AT DEWEY		CHMIRS
SACRAMENTO	97020068		(IN PLANT)PROCTER & GAMBLE		HMIRS
SACRAMENTO	S105675233		POCKET RD. AT WINDBRIDGE DR.		CHMIRS
SACRAMENTO	S106396112		NORTH POINT WAY AT KATHY		CHMIRS
SACRAMENTO	S108403619		POPE JUST OF EAST OF WATT AVE.		CHMIRS
SACRAMENTO	S105637683		PORT OF SACRAMENTO, WOOD CHIP STORAGE AREA		CHMIRS
SACRAMENTO	S108406586		POST OFFICE, 5853 CITATION WAY		CHMIRS
SACRAMENTO	90170065	SB POWER IN RD AT RAMONA	SB POWER IN RD AT RAMONA		ERNS
SACRAMENTO	S105658614		POWER INN ROAD		CHMIRS
SACRAMENTO	S105671701		POWER INN RD., MPM 43.4, FRESNO SUB-DIVISION.		CHMIRS
SACRAMENTO	2006818088	POWER INN RD	POWER INN RD		ERNS
SACRAMENTO	S108404595		POWER INN ROAD NORTH OF FLORIN ROAD		CHMIRS
SACRAMENTO	S107540306		POWER LINE RD, .5 MILE N OF DEL PASO	0	CDL
SACRAMENTO	S105659492		POWERLINE ROAD;1/ 2 MILE NORTH OF ELVERTA RD		CHMIRS
SACRAMENTO	90181200	POWERLINE/ELVERTA SUB- STATION AT CORNER OF POWERLINE RD & E	POWERLINE/ELVERTA SUB- STATION AT CORNER OF POWERLINE RD & E		ERNS
SACRAMENTO	90464939	POWERLINE/ELVERTA SUB- STATION AT CORNER	POWERLINE/ELVERTA SUB- STATION AT CORNER		ERNS
SACRAMENTO	98440336	PROCESS PIPELINE / DURING A TRANSFER A SPILL OCURRED (LINE D	PROCESS PIPELINE / DURING A TRANSFER A SPILL OCURRED (LINE D		ERNS
SACRAMENTO	S105630639		PROCTOR AND GAMBLE 8201 FRUITRIDGE		CHMIRS
SACRAMENTO	2005602890	PROTOR & GAMBEL RAILYARD	PROTOR & GAMBEL RAILYARD		ERNS
SACRAMENTO	S107450469		5TH AT Q ST		CHMIRS
SACRAMENTO	S105651695		23 QUAIL PT PLACE		CHMIRS
SACRAMENTO	S105641791		QUIK STOP CORNER OF 4TH AVE / 2830 FRANKLIN BLV		CHMIRS
SACRAMENTO	S105632933		RAILROAD AVE X BUTTE AVE INDUSTRAIL		CHMIRS
SACRAMENTO	8714057	RAILYARD	RAILYARD		ERNS
SACRAMENTO	8873284	RAMONA + BRIGHTON STS	RAMONA + BRIGHTON STS		ERNS
SACRAMENTO	S105660556		2710 RAMP WAU, SLIP B 10		CHMIRS
SACRAMENTO	S105665429		2710 RAMPWAY #1, MILLER PARK MARINA		CHMIRS

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SACRAMENTO	S106391771		RANCHO DEL PASO, ALTA ARDEN EXPRESS WAY AND WRIGHT		CHMIRS
SACRAMENTO	S105635995		REAR OF 2421 WEST W STREET		CHMIRS
SACRAMENTO	S105676463		EL REY WAY AT OPAL LANE		CHMIRS
SACRAMENTO	S105646922		RICHARDS BLVD / SB I5		CHMIRS
SACRAMENTO	91050514		RICHARDS BLVD		HMIRS
SACRAMENTO	U003731336	FARM AIR FLYING SERICE, INC.	WEST RIEGO RD, 4425		UST
SACRAMENTO	96490636	RIVER VIEW MARINA 1801 GARDEN HWY	RIVER VIEW MARINA 1801 GARDEN HWY		ERNS
SACRAMENTO	S102797305	PIPELINE TRUCKING	SOUTH RIVER RD RIGHT BABBLE	00000	HAZNET
SACRAMENTO	S105629967		RIVERBANK MARINA SACRAMENTO RIVER OFF I 5		CHMIRS
SACRAMENTO	S107450504		6058 RIVERSIDE BLVD (APARTMENT COMPLEX)		CHMIRS
SACRAMENTO	S105645404		RIVERVIEW MARINA GARDEN HIWAY		CHMIRS
SACRAMENTO	S105665103		SB ROUTE 99 @ MARTIN LUTHER KING BLVD.		CHMIRS
SACRAMENTO	S105667437		IN RT METRO PARKING LOT (BUS 80 AND I80 SPLIT)		CHMIRS
SACRAMENTO	S106112447	HEALTH & WELFARE DATA CENTER, SITE #204**	3301, 3325 S ST		SLIC
SACRAMENTO	S105885311		SAC SUB MPM 140		CHMIRS
SACRAMENTO	87463971	SAC. TMNL.,PIPLN.M.P. 61.32/SAC. RIVER	SAC. TMNL.,PIPLN.M.P. 61.32/SAC. RIVER		ERNS
SACRAMENTO	S105245832	TANK MA7	SACRAMENTO METRO AIRPORT		Sacramento Co. CS
SACRAMENTO	S105245831	SACSMF RTR	SACRAMENTO METRO AIRPORT		Sacramento Co. CS
SACRAMENTO	S105245830	METRO BURN PIT	SACRAMENTO METRO AIRPORT		Sacramento Co. CS
SACRAMENTO	90168548	SOUTH SACRAMENTO TRACK 4 EAST GRAND	SOUTH SACRAMENTO TRACK 4 EAST GRAND		ERNS
SACRAMENTO	S105885237		SACRAMENTO YACHT CLUB		CHMIRS
SACRAMENTO	S105883996		SACRAMENTO DELTA		CHMIRS
SACRAMENTO	S105256600	SACRAMENTO MS4 PERMIT	SACRAMENTO METROPOLITAN AREA		CA WDS
SACRAMENTO	2003126175		SACRAMENTO INTERNATIONAL AIRPO		HMIRS
SACRAMENTO	S105673144		SACRAMENTO TRAIN DEPOT		CHMIRS
SACRAMENTO	S105666419		SACRAMENTO MARINA - 2710 RAMP WAY		CHMIRS
SACRAMENTO	S106394961		SACRAMENTO COUNTY. SOUTH OF 14TH AVENUE IN AN IND		CHMIRS
SACRAMENTO	S108405470		SACRAMENTO INTERNATIONAL AIRPORT		CHMIRS
SACRAMENTO	S107453424		SACRAMENTO AMTRAK STATION, 410 I STREET		CHMIRS
SACRAMENTO	9999050883		SACRAMENTO INT'L AIRPORT		HMIRS
SACRAMENTO	9900004851		SACRAMENTO INT'L AIRPORT		HMIRS
SACRAMENTO	S106391784		SACRAMENTO. UNDER TRESTLE NEAR CARBIDE CT AND ELS		CHMIRS
SACRAMENTO	S106400034		SAILORS BAR AND ILLINOIS AVE		CHMIRS
SACRAMENTO	S105651551		SAN JUAN ROAD AT TRUXEL ROAD		CHMIRS
SACRAMENTO	S108403643		4880 SAN JUAN AND SUNSET		CHMIRS
SACRAMENTO	91226758	SAPHIRE CT.	SAPHIRE CT.		ERNS
SACRAMENTO	S105677425		I-5 SB AT J ST.		CHMIRS
SACRAMENTO	S107452106		I-5 SB TO HWY 50 E CONNECTOR ON THE RIGHT HAND SHO		CHMIRS
SACRAMENTO	S106389202		SECOND CREEK WHICH RUNS IN FRONT OF BLDG 1069, MCC		CHMIRS
SACRAMENTO	8715725	SERVICE STN #442/4224	SERVICE STN #442/4224		ERNS
SACRAMENTO	S105671163		SERVICE STATION 5585, 8100 GERBER RD.		CHMIRS
SACRAMENTO	90170763	SEVENTH ST YARD	SEVENTH ST YARD		ERNS
SACRAMENTO	90465638	SEVENTH ST YARD	SEVENTH ST YARD		ERNS
SACRAMENTO	98447305	SHEEN SIZE:30FT X 30FT / RAINBOW	SHEEN SIZE:30FT X 30FT / RAINBOW		ERNS
SACRAMENTO	96472718	SHEEN SIZE: 100YDS X 50YDS	SHEEN SIZE: 100YDS X 50YDS		ERNS
SACRAMENTO	98463104	SHEEN DISSIPATED / SOURCE SECURED	SHEEN DISSIPATED / SOURCE SECURED		ERNS
SACRAMENTO	S106394040		EAST SIDE OF THE SACRAMENTO RIVER, AT CAPITOL MALL		CHMIRS

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SACRAMENTO	S106392937		WEST SIDE OF FREEPORT, SW CORNER OF EXECUTIVE AIRP		CHMIRS
SACRAMENTO	S106391317		SOUTH SIDE OF MADISON AVE BETWEEN SAN JUAN AND SUN		CHMIRS
SACRAMENTO	S100279477		SR-51 SIELVAS O.C.		CHMIRS
SACRAMENTO	8872771	SIERRA SPRINGS WATER	SIERRA SPRINGS WATER		ERNS
SACRAMENTO	S105633227		SIMMS ROAS AT SACRAMENTO WATER TREATMENT PLANT		CHMIRS
SACRAMENTO	S107540696		SLOUGHHOUSE RD / GRANTLINE RD	0	CDL
SACRAMENTO	99637495	SNUG HARBOR	SNUG HARBOR		ERNS
SACRAMENTO	S105671887		3325 SOGEL COURT		CHMIRS
SACRAMENTO	S105629536		SOSUTHBOUND I 5, NORTH OF SUTTERVILLE RD		CHMIRS
SACRAMENTO	2006820074	1570 SOTH RIVER RD	1570 SOTH RIVER RD		ERNS
SACRAMENTO	S105629413		1/2 MI SOUTH OF TOWER BRIGDE		CHMIRS
SACRAMENTO	S105636734		SOUTHBOUND SR 99 NORTH OF 12TH AVENUE		CHMIRS
SACRAMENTO	8850332	SOUTHBOUND 50 TO EASTBOUND 50	SOUTHBOUND 50 TO EASTBOUND 50		ERNS
SACRAMENTO	S106389828		SOUTHBOUND I-5, SOUTH OF AIRPORT BLVD AT SOUTH FRO		CHMIRS
SACRAMENTO	S106393156		SOUTHBOUND I5 AT THE HOOD FRANKLIN EXIT - ON THE E		CHMIRS
SACRAMENTO	S100279942		SR-51 SOUTHBOUND AT FULTON		CHMIRS
SACRAMENTO	S107453735		SOUTHBOUND I5 SOUTH OF SUTTERVILLE RD.		CHMIRS
SACRAMENTO	2001566968	SOUTHERN PACIFIC RAILROAD TRACKS	SOUTHERN PACIFIC RAILROAD TRACKS	0	ERNS
SACRAMENTO	S105629345		SOUTHLAND PARK DR / FLORIN RD		CHMIRS
SACRAMENTO	S105665769		SPILL AT 50TH AND BROADWAY		CHMIRS
SACRAMENTO	S106396648		SB SR 99 SOUTH OF 47TH AVE.		CHMIRS
SACRAMENTO	S106398696		NB SR 99 NORTH OF FLORIN RD.		CHMIRS
SACRAMENTO	S100280245		S/B SR 51 AT MARCONI OFF-RAMP		CHMIRS
SACRAMENTO	S100218831		E/B SR 20, 37' E/24TH ST		CHMIRS
SACRAMENTO	S105649632		EB SR50 AT 65TH STREET		CHMIRS
SACRAMENTO	S105664403		NB SR51 AT H ST. OFFRAMP		CHMIRS
SACRAMENTO	S106393049		SB SR51 NORTH OF P ST AND EB US50 ONTO OFF RAMP OF		CHMIRS
SACRAMENTO	S105885316		N ST AT MPM 138.3		CHMIRS
SACRAMENTO	S105662160		I ST BRIDGE		CHMIRS
SACRAMENTO	S105659454		C ST AT 19TH ST, MPM 139.2		CHMIRS
SACRAMENTO	S108484716	LOT X CITY OF SACRAMENTO PROPERTY	0 N ST		Sacramento Co. CS
SACRAMENTO	S106230388	POWELL MATERIALS	R ST (BETWEEN 25TH AND 26TH)		SLIC
SACRAMENTO	S106230387	CALTRANS	Q ST (OFFRAMP OF A-5)		SLIC
SACRAMENTO	S106198511	FORMER GASCO STATION #758	505 30TH ST		Sacramento Co. CS
SACRAMENTO	S103678820	CITY OF SACRAMENTO	H ST BRIDGE OVER AMERICAN RIVE	00000	HAZNET
SACRAMENTO	S105883884		2710 U ST. APT. #7		CHMIRS
SACRAMENTO	S105886561		H ST. AT 9TH ST.		CHMIRS
SACRAMENTO	S105674108		Q ST. AND 22ND, MPM 139.75 SACRAMENTO SUBDIVISION		CHMIRS
SACRAMENTO	S105669339		N ST. AT 19TH ST.		CHMIRS
SACRAMENTO	S105666613		I ST. AT SACRAMENTO RIVER		CHMIRS
SACRAMENTO	S100216653		E ST. OFF RAMP / SB 50		CHMIRS
SACRAMENTO	S100280742		J ST. OFF RAMP, S/B I-5		CHMIRS
SACRAMENTO	S100222238		4830 S ST.		CHMIRS
SACRAMENTO	S108404450		F ST. OFF OF SR160		CHMIRS
SACRAMENTO	S105645567		STATE CONTROLLER'S OFFICE 3301 C STREET		CHMIRS
SACRAMENTO	91466505	STATE ROUTE 193 AND CHILE BAR RD	STATE ROUTE 193 AND CHILE BAR RD		ERNS
SACRAMENTO	91210258	STATE ROUTE 193 & CHILE R ROAD	STATE ROUTE 193 & CHILE R ROAD		ERNS

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SACRAMENTO	S105883688		STATION # 6613 @ 7969 WALERGA RD.		CHMIRS
SACRAMENTO	S104970714	PRICE CO/DWR - RETENTION POND	E STOCKTON BLVD		Sacramento Co. CS
SACRAMENTO	S105644083		2315 STOCKTON BLVD UCD MEDICAL CENTER		CHMIRS
SACRAMENTO	S105673700		E STOCKTON BLVD SOUTH OF STEVENSON AVE		CHMIRS
SACRAMENTO	S105668482		7891 STOCKTON BLVD AT THE 76 TRUCK STOP.		CHMIRS
SACRAMENTO	S106398718		STOCKTON BLVD. AT VICTORY		CHMIRS
SACRAMENTO	92256189	7891 STOCKTON ON VICTORY LANE	7891 STOCKTON ON VICTORY LANE		ERNS
SACRAMENTO	96489504	STONE LAKE WILDLIFE INTERSTATE 5 AND ELK GROVE BLVD	STONE LAKE WILDLIFE INTERSTATE 5 AND ELK GROVE BLVD		ERNS
SACRAMENTO	S105637270		STORAGE CELLS 11855 WHITE ROCK ROAD		CHMIRS
SACRAMENTO	S105648950		N STREET OFF-RAMP TO EB CCF		CHMIRS
SACRAMENTO	S105637309		62222 27TH STREET		CHMIRS
SACRAMENTO	1009619601	2530 S STREET APT 8	2530 S STREET APT 8		US CDL
SACRAMENTO	S105643839		2627 U STREET APT #5		CHMIRS
SACRAMENTO	S100280009		J STREET OFF/N.B I-5		CHMIRS
SACRAMENTO	S105667831		I STREET BETWEEN 19TH / 20TH STREET	UNK	CHMIRS
SACRAMENTO	2001558142	8561 32ND STREET	8561 32ND STREET	0	ERNS
SACRAMENTO	S105676599		8561 32ND STREET, BEHIND THE FACILITY		CHMIRS
SACRAMENTO	S105648252		4001J STREET., MERCY GENERAL HOSPITAL		CHMIRS
SACRAMENTO	90181609	SUMPING IN CREEK BEHIND WAREHOUSES *	SUMPING IN CREEK BEHIND WAREHOUSES *		ERNS
SACRAMENTO	S105668951		SUNRISE AND DOUGLAS BLVD		CHMIRS
SACRAMENTO	2000520219	SUNRISE AND DOUGLAS BLVD	SUNRISE AND DOUGLAS BLVD	0	ERNS
SACRAMENTO	S105629834		SUTHBOUND I 5 AT AMERICAN RIVER BRIDGE		CHMIRS
SACRAMENTO	S106390315		SUTTER GENERAL HOSPITAL 2801 "L" STREET (IN PATHO		CHMIRS
SACRAMENTO	S105084134	SACRAMENTO CITY USD-SUTTERVILLE ELEM	SUTTERVILLE ELEMENTARY SCHOOL	00000	HAZNET
SACRAMENTO	91222121	TAFT ST. (CHURCH) BEHIND CALLER'S HOUSE	TAFT ST. (CHURCH) BEHIND CALLER'S HOUSE		ERNS
SACRAMENTO	92293524	6700 TARSKES DR ANCIL HOFFMAN PARK	6700 TARSKES DR ANCIL HOFFMAN PARK		ERNS
SACRAMENTO	S100215938		4361 TELL DR.		CHMIRS
SACRAMENTO	S108402581		B TERMINAL GATE 33		CHMIRS
SACRAMENTO	S105663266		ON THE UPRR TRACK 108 AT THE RAIL YARD		CHMIRS
SACRAMENTO	S107452139		IN THE ALLEY NEXT TO 1816 21ST STREET		CHMIRS
SACRAMENTO	S107453857		THE STATE CAPITOL, ON THE 10TH ST. SIDE NEAR CAPIT		CHMIRS
SACRAMENTO	S107453098		ON THE SACRAMENTO SUBDIVISION, AT MPM 141.5		CHMIRS
SACRAMENTO	S107448599		138.6 ON THE SACRAMENTO SUBDIVISION		CHMIRS
SACRAMENTO	8874606	THRIFTY DRUG CO	THRIFTY DRUG CO		ERNS
SACRAMENTO	8873689	85551 THYS COURT UNIT C	85551 THYS COURT UNIT C		ERNS
SACRAMENTO	S106447113	TOKAY PARK WATER MAINLINE REPL	TOKAY PARK NW CORNER OF FLORIN		CA WDS
SACRAMENTO	8872783	1700 TRUXEL RD (1MI NO OF DEL PASA RD)	1700 TRUXEL RD (1MI NO OF DEL PASA RD)		ERNS
SACRAMENTO	S106392411		TUNNELS UNDER BIRDCAGE NORTH OF SUNRISE BLVD, SACR		CHMIRS
SACRAMENTO	S105633998		UNILAB CORP BLVD 3714 NORTHGATE		CHMIRS
SACRAMENTO	8873167	UNK DRUG LAB	UNK DRUG LAB		ERNS
SACRAMENTO	2003700692	UNKNOWN FACILITY	UNKNOWN FACILITY		ERNS
SACRAMENTO	96472829	UNKNOWN / UNKNOWN SHEEN SIGHTING	UNKNOWN / UNKNOWN SHEEN SIGHTING		ERNS
SACRAMENTO	S105639891		UNOCAL TERMINAL ,76 BROADWAY		CHMIRS
SACRAMENTO	S106390318		UNOCAL TRUCK STOP 2828 EL CENTRO ROAD (NATOMAS AR		CHMIRS
SACRAMENTO	91205209	UNOCAL PLANT	UNOCAL PLANT		ERNS
SACRAMENTO	S105653848		EB US HWY 50 AT 65TH ST		CHMIRS

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SACRAMENTO	S105645897		WB US 50 WEST OF SUNRISE BLVD		CHMIRS
SACRAMENTO	S105664870		WB US 50 E OF 65 TH ST		CHMIRS
SACRAMENTO	S105657241		WB US50 AT EB I80 OVERCROSSING		CHMIRS
SACRAMENTO	90188307	W/B US80 BETW ANTELOPE & FULTON OFF RAMP	W/B US80 BETW ANTELOPE & FULTON OFF RAMP		ERNS
SACRAMENTO	8713791	VACANT FIELD OFF OF BILDY RD	VACANT FIELD OFF OF BILDY RD		ERNS
SACRAMENTO	S105630671		VACANT LOT AT JESSE AVE AND TAYLOR ST.		CHMIRS
SACRAMENTO	S106400960		VALLEY HIGH DR. AND WEATHERFORD		CHMIRS
SACRAMENTO	S106447107	MICHIGAN BAR PIT	VAN VLECK RANCH NORTH HWY 16		CA WDS
SACRAMENTO	S107150180	SACRAMENTO COUNTY/CLANDESTINE DRUG LABS	VARIOUS LOCATIONS WITHIN SACRAMENTO		HAZNET
SACRAMENTO	S103680158	SACRAMENTO COUNTY/CLANDESTINE DRUG LABS	VARIOUS LOCATIONS WITHIN SACRAMENTO CNTY	00000	HAZNET
SACRAMENTO	S103680188	CAL TRANS DISTRICT 03	VIETNAMS VETERANS MEMEORIAL BRIDGE	00000	HAZNET
SACRAMENTO	S105884539		VIRGIN STURGEON AT 1577 GARDEN HWY.		CHMIRS
SACRAMENTO	S100221884		I-5 W/O 3RD ST.		CHMIRS
SACRAMENTO	S105661884		WALEGRA JUST NORTH OF ELK HORN BLVD		CHMIRS
SACRAMENTO	S105629779		WALERGA ROAD / BASELINE RD		CHMIRS
SACRAMENTO	S108406132		WALERGA RD AND ROSEVILLE RD		CHMIRS
SACRAMENTO	S106869353	SAC COUNTY-HWY & BRIDGES	WATT AVE		Sacramento Co. CS
SACRAMENTO	S106869352	NELSON\ROGERS DEVELOPMENT	WATT AVE		Sacramento Co. CS
SACRAMENTO	S108402390		WATT AV UNDERPASS, 98.3 MILE MARKER		CHMIRS
SACRAMENTO	2002600448	WATT AVENUE	WATT AVENUE	0	ERNS
SACRAMENTO	2000672966	P WAY	P WAY		ERNS
SACRAMENTO	8873464	I-80 WB /NR OLD SACRAMENTO EXIT	I-80 WB /NR OLD SACRAMENTO EXIT		ERNS
SACRAMENTO	S107453009		NORTH WEST CORNER OF 65TH ST AND FRUITRIDGE RD		CHMIRS
SACRAMENTO	S105649521		WESTBOUND 80 AT NORWOOD OFFRAMP, #3 LANE		CHMIRS
SACRAMENTO	S105675370		WESTBOUND 80, JUST WEST OF MADISON		CHMIRS
SACRAMENTO	S103680230	SACRAMENTO HOUSING REDEVELOPMENT	WESTERN AVE SINGLE FAM REHAB	00000	HAZNET
SACRAMENTO	S106391969		WESTSIDE OF FREEPORT BLVD, SOUTHEAST CORNER OF THE		CHMIRS
SACRAMENTO	S105641562		WINDING WAY , WEST OF CHICAGO AVE.		CHMIRS
SACRAMENTO	90060444		WINTERS STREET		HMIRS
SACRAMENTO	S107450531		6207 WOLF LN		CHMIRS
SACRAMENTO	S107454155		XXXX		CHMIRS
SACRAMENTO	91237687	200 YDS SOUTH OF JUICY RESORT MOKELUMNE RIVER	200 YDS SOUTH OF JUICY RESORT MOKELUMNE RIVER		ERNS
SACRAMENTO COUNTY	S106389177	1X SAMPAT, KEN	--		HAZNET, CHMIRS
SACRAMENTO COUNTY	90174203	N/B 99 TO W/B I-80	N/B 99 TO W/B I-80		ERNS
SACRAMENTO COUNTY	99610498	HIGHWAY 99 AND RIEGO ROAD	HIGHWAY 99 AND RIEGO ROAD		ERNS
SACRAMENTO COUNTY	S105632042		US 99 N.B SHELTON RD		CHMIRS
SACRAMENTO COUNTY	90188312	AERO JET ROAD AND US 50	AERO JET ROAD AND US 50		ERNS
SACRAMENTO COUNTY	S105631935		6920 AIRPORT BLVD METRO A.P LOADING DOCK 3E		CHMIRS
SACRAMENTO COUNTY	S105632160		ANDRIS ISLAND CITY OF ISLETON		CHMIRS
SACRAMENTO COUNTY	S106389034		ANTELOPE BLVD. / AUBURN BLVD. RUSCH PARK- CRIPP		CHMIRS
SACRAMENTO COUNTY	91205705	J AREA TEST STAND	J AREA TEST STAND		ERNS
SACRAMENTO COUNTY	8719674	BARRELS STORED BEHIND FACILITY	BARRELS STORED BEHIND FACILITY		ERNS
SACRAMENTO COUNTY	8717236	BEHIND THE ELECTRIC YARD	BEHIND THE ELECTRIC YARD		ERNS
SACRAMENTO COUNTY	S106389351		BETWEEN KORTS HRBR AND HAPPY HARBOUR SACRAMNTO D		CHMIRS
SACRAMENTO COUNTY	91210235	500 BILBY RD	500 BILBY RD		ERNS
SACRAMENTO COUNTY	875441	BLDG 49015 ON NW CORNER	BLDG 49015 ON NW CORNER		ERNS

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SACRAMENTO COUNTY	91220627	BUILDING 362	BUILDING 362		ERNS
SACRAMENTO COUNTY	S105631981		CAMPBELL 6200 FRANKLIN BLVD		CHMIRS
SACRAMENTO COUNTY	S105637372		CHEMICAL WASTE FACILITY 11855 WHITE ROCK RD		CHMIRS
SACRAMENTO COUNTY	S106388997		COMMUNITY DEVELOPMENT DEPT OF HOUSING 3RD / R 1		CHMIRS
SACRAMENTO COUNTY	S105632067		10108 COUNTRY SIDE WAY		CHMIRS
SACRAMENTO COUNTY	8852758	COUNTY DUMPING IN LOT NEXT TO CALLER'S ADDRESS	COUNTY DUMPING IN LOT NEXT TO CALLER'S ADDRESS		ERNS
SACRAMENTO COUNTY	90185860	CROSS OF POWERLINE & ELVIRA RD. **	CROSS OF POWERLINE & ELVIRA RD. **		ERNS
SACRAMENTO COUNTY	2001557055	8811 CURRAGH DOWNES DRIVE	8811 CURRAGH DOWNES DRIVE	0	ERNS
SACRAMENTO COUNTY	91228940	DOWD LANE	DOWD LANE		ERNS
SACRAMENTO COUNTY	S106389254		DRAINAGE DITCH REAR OF 77176 LAUPPE LANE OAK GROV		CHMIRS
SACRAMENTO COUNTY	2004713298	EDGEWATER ROAD AT LAMPASAS AVE.	EDGEWATER ROAD AT LAMPASAS AVE.		ERNS
SACRAMENTO COUNTY	S105631453		WEST ELK HORN BLVD 1/4 MI. EAST OF LEVEE ROAD		CHMIRS
SACRAMENTO COUNTY	S105631666		SOUTH END 360 FLOWED TO MAGPI CREEK		CHMIRS
SACRAMENTO COUNTY	90167488	FRANKLIN RD/2 1/2 MI S OF TWIN CITIES RD	FRANKLIN RD/2 1/2 MI S OF TWIN CITIES RD		ERNS
SACRAMENTO COUNTY	91202888	FREEPORT MARINA IN RIVER	FREEPORT MARINA IN RIVER		ERNS
SACRAMENTO COUNTY	2000521846	FRESNO SUBDIVISION	FRESNO SUBDIVISION	0	ERNS
SACRAMENTO COUNTY	S106390202		FROM SUMP NEAR WASTE TREATMENT FACILITY MCCLELLAN		CHMIRS
SACRAMENTO COUNTY	879801	IN FRONT OF DOCK	IN FRONT OF DOCK		ERNS
SACRAMENTO COUNTY	S105636464		GRANT LINE ROAD NORTH OF DOUGLAS BLVD		CHMIRS
SACRAMENTO COUNTY	88130800	ON HWY 50 AT AEROJET RD	ON HWY 50 AT AEROJET RD		ERNS
SACRAMENTO COUNTY	90168617	SB I-5, 740 FT. N OF MUKELUMNE RIVER BR.	SB I-5, 740 FT. N OF MUKELUMNE RIVER BR.		ERNS
SACRAMENTO COUNTY	91234954	NB I-5/1 MI N OF TWIN CITIES NR FRANKLIN	NB I-5/1 MI N OF TWIN CITIES NR FRANKLIN		ERNS
SACRAMENTO COUNTY	2002619015	ISLETON RD	ISLETON RD	0	ERNS
SACRAMENTO COUNTY	96508954	LINE NO. 172 BETWEEN COLUSA, CA AND PRINCETON, CA	LINE NO. 172 BETWEEN COLUSA, CA AND PRINCETON, CA		ERNS
SACRAMENTO COUNTY	S106389080		EAST MAIN DRAIN CANAL, 3/4 MILE NORTH OF OL ELVER		CHMIRS
SACRAMENTO COUNTY	S106389334		MANHOLE 9524-9530 LAKE NATOMA DRIVE MAIN / MADIS		CHMIRS
SACRAMENTO COUNTY	S105641330		MERCY SAN JUAN HOSPITAL		CHMIRS
SACRAMENTO COUNTY	S105887422		MILE POST 42.70 FRESNO SUB DIV.		CHMIRS
SACRAMENTO COUNTY	S105887420		MILE POST 46.8 FRESNO SUB DIV.		CHMIRS
SACRAMENTO COUNTY	S106391667		2 MILE EAST OF RIO VISTA ON HIWAY 12,1 MILE NORTH		CHMIRS
SACRAMENTO COUNTY	S105641981		MILL STN RD, EAST OF ROUTIER RD		CHMIRS
SACRAMENTO COUNTY	S105631059		NEVADA CO, YUBA CO, PLACER COUNTY		CHMIRS
SACRAMENTO COUNTY	S105631549		OAK AVENUE AT WACHTEL		CHMIRS
SACRAMENTO COUNTY	91228960	OFF GARDEN HWY 2 MI N OF CLUCARTE RD	OFF GARDEN HWY 2 MI N OF CLUCARTE RD		ERNS
SACRAMENTO COUNTY	91201911	OLD SACRAMENO FRONT AND K ST.	OLD SACRAMENO FRONT AND K ST.		ERNS
SACRAMENTO COUNTY	90185859	POWERLINE-ELVIRA SUBSTATION **	POWERLINE-ELVIRA SUBSTATION **		ERNS
SACRAMENTO COUNTY	S106395338		SACRAMENTO RIVER, SOMEWHERE. UNKNOWN FOR SURE IN W		CHMIRS
SACRAMENTO COUNTY	S105638062		SKYVIEW / KITTY HAWK STREETS		CHMIRS
SACRAMENTO COUNTY	91200767	STEAMBOAT SLOUGH NEAR GRAND ISLAND	STEAMBOAT SLOUGH NEAR GRAND ISLAND		ERNS
SACRAMENTO COUNTY	S105635587		4209 STENCAR FAIR OAKS		CHMIRS
SACRAMENTO COUNTY	S105637548		8306 STEPHENSON RD		CHMIRS
SACRAMENTO COUNTY	S105642345		STOCKTON BLVD AT 14TH AVE		CHMIRS
SACRAMENTO COUNTY	8864086	STORED OUTSIDE BACK DOOR	STORED OUTSIDE BACK DOOR		ERNS
SACRAMENTO COUNTY	879370	ON STREET VICINITY OF ADDRESS	ON STREET VICINITY OF ADDRESS		ERNS
SACRAMENTO COUNTY	S105642726		TERMINAL 4200 WEST CAPITOL		CHMIRS

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SACRAMENTO COUNTY	S105631165		TERMINAL, 4200 WEST CAPT. AVE		CHMIRS
SACRAMENTO COUNTY	S105641112		TWITCHELL ISLAND ROAD .5 MI WEST OF RIO VISTA		CHMIRS, SLIC
SACRAMENTO COUNTY	S106389312		UNKNOWN NAMED CREEK AT : 3901 FAIR OAKS BLVD /CROS		CHMIRS
SACRAMENTO COUNTY	S107541034		VEHICLE STOP @ NORTH 99 / RIEGO RD	0	CDL
SACRAMENTO COUNTY	S107534852		5428 WATT AVE (IN CAMERO #SP018F)	0	CDL
SACRAMENTO COUNTY	875598	'A' ZONE	'A' ZONE		ERNS
SACRAMENTO/ CARMICH/	S106389081		1,000 WEST OF ORANGE GROVE AVE AT AUBURN , FEEDER		CHMIRS
SACREMENTO	2001564373	26TH AND W STREETS	26TH AND W STREETS	0	ERNS
SACREMENTO	984226100	206 CANO WAY	206 CANO WAY		ERNS
SACREMENTO	94406608	FLIGHT LINE MCCLELLEN AFB	FLIGHT LINE MCCLELLEN AFB		ERNS
SACREMENTO	98449415	8381 FLORINE ROAD	8381 FLORINE ROAD		ERNS
SACREMENTO	91204466	SHIPPERS TRACK 3961 CHANNEL DR.	SHIPPERS TRACK 3961 CHANNEL DR.		ERNS
SACRMENTO	S107451350		CAL EXPO PARKING LOT A		CHMIRS
SAN FRANCISCO	94393093	SAN PABLO BAY CHANNEL LIGHT 14	SAN PABLO BAY CHANNEL LIGHT 14		ERNS
SCARAMENTO	8856958	SB HWY 50/POWER INN HOWE X *87	SB HWY 50/POWER INN HOWE X *87		ERNS
SLOUGH HOUSE (NR)	8874183	7200 LONE PINE RD/STATE RT. 16 MP 16.7	7200 LONE PINE RD/STATE RT. 16 MP 16.7		ERNS
SLOUGHHOUSE	S105643783		KIEFER LANDFILL 12701 KIEFER BLVD		CHMIRS
SLOUGHHOUSE	S105037028	BOYS RANCH WWTF	SCOTT RD		CA WDS
SOUTH SACRAMENTO	S107451904		GRANT LINE RD 1/2 MILE NORTH OF KEEFER BLVD		CHMIRS
STOCKTON	8711364	STOCKTON YARD;TRACK 15;MILE POST 93	STOCKTON YARD;TRACK 15;MILE POST 93		ERNS
STOCKTON	87464110	STOCKTON R.R YARDS/TRACK #15/MP-93	STOCKTON R.R YARDS/TRACK #15/MP-93		ERNS
TEST	S106400540		123 TEST		CHMIRS
TEST	S106398475		TEST TEST		CHMIRS
THORTON	90167485	ABOUT 2-5 MI. S OF TWIN CITY RDS. ON *73	ABOUT 2-5 MI. S OF TWIN CITY RDS. ON *73		ERNS
UNI.	S107452573		MILE POST 99.2 MARTINEZ SUB. DIV.		CHMIRS
UNICORPORATED	S105644133		MIDLAND FEE #1 JACKSON SLOUGH RD / HWY 12		CHMIRS
UNINC	S100279833		S/B 1-5, 740'N/MOKELUMNE RIVER BRDG.		CHMIRS
UNINC	S100280563		US 50 W/O HAZEL		CHMIRS
UNINC	S100280219		NORTH BEACH LAKE ROAD		CHMIRS
UNINC	S100220654		S/B BEECH AVENUE		CHMIRS
UNINC	S100280394		BOWDED ROAD		CHMIRS
UNINC	S100280196		DOUGLAS ROAD WEST OF GRANT LINE ROAD		CHMIRS
UNINC	S100278788		FLORIN RD. W/O SUNRISE		CHMIRS
UNINC	S105890322		FRUITRIDGE ROAD AT HEDGE AVENUE / MAYHEW ROAD		CHMIRS
UNINC	S100221878		GERBER RD. W/O BRADWHAW		CHMIRS
UNINC	S100279445		GRANTLINE RD W/PRAIRIE CITY		CHMIRS
UNINC	S100279765		GREEN RD, 2057' S/JEFFCOTT RD		CHMIRS
UNINC	S100221886		ILLINOIS AVE. N/O SAILOR BAR		CHMIRS
UNINC	S100278982		5132 KEYSTONE (BEHIND)		CHMIRS
UNINC	S100280581		E/B MADISON AVE. E/I-80 W/B OFF RAMP		CHMIRS
UNINC	S100218025		S/B SR 99 1 MI S/ESCHINGER RD		CHMIRS
UNINCORPORATED	S106392125		DWR POND #7, COTTA ROAD CROSS OF GUARD ROAD NEAR S		CHMIRS
UNINCORPORATED	S105632747		INTERSECTION OF LAGUNA BLVD AND HARBOR POINT		CHMIRS
UNINCORPORATED	S105643363		RIO VISTA FIELD, BRANNAN ISLAND, WELL TB #2		CHMIRS
UNINCORPORATED	S105642866		RIO VISTA GAS FIELD, WELL TB #1, BRANNAN ISLAND		CHMIRS
UNINCORPORATED	S105643599		NB ROSEVILLE RD NORTH OF MADISON AVE		CHMIRS
UNINCORPORATED	S106391487		STONE LAKE NATIONAL WILDLIFE REFUGE I-5 IN ELKGRO		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
UNINCORPORATED COUN	S106395856		HIGHWAY 12 AT HIGHWAY 160 NEAR THE BRIDGE THAT GOE		CHMIRS
UNINCORPORATED COUN	S105883973		NB 160 AT THE NORTH END OF THE ANTIOCH BRIDGE		CHMIRS
UNINCORPORATED COUN	S105665003		HWY 160 2 MILES S/O ISELTON		CHMIRS
UNINCORPORATED COUN	S106396914		HWY 160 JUST SOUTH OF HWY 112. CLOSEST CITY IS RIO		CHMIRS
UNINCORPORATED COUN	S108403304		HWY 160 SHERMAN ISLAND		CHMIRS
UNINCORPORATED COUN	S107452050		HWY 160 SOUTH OF 12		CHMIRS
UNINCORPORATED COUN	S105663633		HWY 160, 4 MILES NORTH OF THE ANTIOCH BRIDGE		CHMIRS
UNINCORPORATED COUN	S105660922		40TH AVE..BEHIND 6021 MARTIN LUTHER KING BLVD		CHMIRS
UNINCORPORATED COUN	S107452684		MP 47 ON THE FRESNO SUBDIVISION, GERBER ROAD IN FL		CHMIRS
UNINCORPORATED COUN	S105887463		SB 5 N/O LAGUNA		CHMIRS
UNINCORPORATED COUN	S105660958		S/B 5 JNO OF TWIN CITIES ROAD		CHMIRS
UNINCORPORATED COUN	S105670942		S/B 5 N/O LAGUNA		CHMIRS
UNINCORPORATED COUN	S105667629		SB 5 JSO SACRAMENTO VEITNAM VETERNS RIVER BRIDGE		CHMIRS
UNINCORPORATED COUN	S106396493		S/B 5 AT LAMBERT		CHMIRS
UNINCORPORATED COUN	S107453526		SB 5 AT LOST SLOUGH		CHMIRS
UNINCORPORATED COUN	S105882654		HWY 50 AND WATT AVE. CLOSEST CITY IS SACRAMENTO.		CHMIRS
UNINCORPORATED COUN	S108401132		51ST AVE EAST OF CONNECTOR ST		CHMIRS
UNINCORPORATED COUN	S105676555		SB 99 AT DILLARD		CHMIRS
UNINCORPORATED COUN	S105657098		SB 99 AT ARNO RD , OFF BOUND AND ON BOUND RAMPS		CHMIRS
UNINCORPORATED COUN	S105673589		S/B 99 N/O DILLARD RD.		CHMIRS
UNINCORPORATED COUN	S105665742		NB 99 JUST N OF DILLARD RD.		CHMIRS
UNINCORPORATED COUN	S108406334		NB 99 AT THE GARDEN HWY (IN A VINEYARD)		CHMIRS
UNINCORPORATED COUN	S106398761		ALAMAR RESTAURANT AND MARINA / 5999 GARDEN HIGHWAY		CHMIRS
UNINCORPORATED COUN	S106394051		ALDER AVE. AT HEDGE AVE., NEAREST CITY IS SACRAMEN		CHMIRS
UNINCORPORATED COUN	S106400991		ALDER AT HEDGE		CHMIRS
UNINCORPORATED COUN	S108401362		ALONG ROADWAY ON HWY. 12 EAST OF HWY. 160, THE N		CHMIRS
UNINCORPORATED COUN	S106393116		ANDRUS ISLAND ROAD, 2 MILES NORTH OF ISLETON BRIDG		CHMIRS
UNINCORPORATED COUN	S106393115		ANDRUS ISLAND, 1/2 MILE NORTH OF THE ISLETON BRIDG		CHMIRS
UNINCORPORATED COUN	S108403358		4724 ARNOLD AT BAILY		CHMIRS
UNINCORPORATED COUN	S105664386		SOUTHWEST AVE AT STOCKTON BLVD.		CHMIRS
UNINCORPORATED COUN	S106393103		SOUTH BANK OF THE AMERICAN RIVER, EAST OF THE I5 B		CHMIRS
UNINCORPORATED COUN	S105884200		BASELINE AT RIALTO RD		CHMIRS
UNINCORPORATED COUN	S108406562		WEST BOUND SR16 JUST EAST OF HEDGE, THE NEAREST T		CHMIRS
UNINCORPORATED COUN	S105662113		BRADSHAW RD AT CALVINERD		CHMIRS
UNINCORPORATED COUN	S105662084		BRADSHAW ROAD AT LAGUNA CREEK		CHMIRS
UNINCORPORATED COUN	S106397168		BRANNAN ISLAND BOAT LAUNCH AT 3 MILE SLOUGH		CHMIRS
UNINCORPORATED COUN	S105656188		BRUCEVILLE RD 200YRDS N CROSS OF LAMBERT		CHMIRS
UNINCORPORATED COUN	S106400655		BRUNO HARBOR		CHMIRS
UNINCORPORATED COUN	S105653785		5 BUILDING, MINIYARD, FOLSOM STATE PRISON		CHMIRS
UNINCORPORATED COUN	S105885652		CENTER PARKWAY AT FORREST PARKWAY		CHMIRS
UNINCORPORATED COUN	S107451450		CLAY STATION RD. BETWEEN DILLARD AND HIGHWAY 104,		CHMIRS
UNINCORPORATED COUN	S108403024		COVE AREA SURROUND BY TREES- 169 W. BRANNAN ISLAN		CHMIRS
UNINCORPORATED COUN	S106395285		DIABLO RD. AND WOODCREEK, NEAREST CITY IS CITRUS H		CHMIRS
UNINCORPORATED COUN	S105882114		DILLARD RD. AND DAVIS RD. CLOSEST TOWN IS WILTON		CHMIRS
UNINCORPORATED COUN	S106396780		DILLARD RD AND WALTMORT RD		CHMIRS
UNINCORPORATED COUN	S105663000		10 MI EAST RANCHO CORDOVA, EB LANE HWY 50		CHMIRS
UNINCORPORATED COUN	S105655326		ELK GROVE BLVD MPM 123.5		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
UNINCORPORATED COUN	S106392476		ELK GROVE FLORIN ROAD AT BRITTANY PARK DRIVE, ELK		CHMIRS
UNINCORPORATED COUN	S108406878		ELK GROVE FLORIN / TIOGA WOODS		CHMIRS
UNINCORPORATED COUN	S105655680		ELVERTA AT PALADAY RDS		CHMIRS
UNINCORPORATED COUN	S105666217		W. ELVERTA RD. AT E LEVEE RD.		CHMIRS
UNINCORPORATED COUN	S106398476		ENTRANCE TO MONTEZUMA SLOUGH, ON THE SACRAMENTO CO		CHMIRS
UNINCORPORATED COUN	S105663983		8890 ESCHINGER RD - A RANCH		CHMIRS
UNINCORPORATED COUN	S105887473		FAIR OAKS BLVD BETWEEN NEW YORK AND BANNISTER		CHMIRS
UNINCORPORATED COUN	S105671173		FLORIN RD. AT THE RAILROAD CROSSING		CHMIRS
UNINCORPORATED COUN	S105664601		FLORIN ROAD ON RAMP TO NB INTERSTATE 5.		CHMIRS
UNINCORPORATED COUN	S105671123		3701 FLORINWOOD DR., NEAR SACRAMENTO		CHMIRS
UNINCORPORATED COUN	S105664358		FOLSOM BLVD WEST OF COLOMA, RANCH CORDOVA		CHMIRS
UNINCORPORATED COUN	S105669000		FOLSOM BLVD W/O HAZEL		CHMIRS
UNINCORPORATED COUN	S105663555		FRESNO SUBDIVISION MILE POST 55.5		CHMIRS
UNINCORPORATED COUN	S105676114		GARDEN HWY AND POWERLINE ROAD		CHMIRS
UNINCORPORATED COUN	S105661438		GRAND ISLAND NEAR STEAMBOAT SLOUGH BRIDGE		CHMIRS
UNINCORPORATED COUN	S105656097		GRANT LINE RD CROSSING AT RR TRACKS, MP120		CHMIRS
UNINCORPORATED COUN	S105664009		GRANTLINE AT DOUGLAS		CHMIRS
UNINCORPORATED COUN	S106400889		HAPPY LN. AND KIEFER BLVD., RANCHO CORDOVA		CHMIRS
UNINCORPORATED COUN	S105655938		HARVY ROAD NORTH OF NEW HOPE ROAD		CHMIRS
UNINCORPORATED COUN	S107451952		HAZEL AVE SOUTH OF OAK AVE		CHMIRS
UNINCORPORATED COUN	S105652912		HERZOG RD AT LAMBERT RD		CHMIRS
UNINCORPORATED COUN	S105669829		SB HIGHWAY 99 AT GRANT LINE RD.		CHMIRS
UNINCORPORATED COUN	S105662883		EB HOOD FRANKLIN TO SB 5 ONRAMP SHOULDER		CHMIRS
UNINCORPORATED COUN	S105660639		S/B HWY 99, TWO MILES SOUTH OF GRANTLINE RD.		CHMIRS
UNINCORPORATED COUN	S105667465		SB HWY 5 @ LOST PLOUGH ON THE CONSUMNES RIVER		CHMIRS
UNINCORPORATED COUN	S105664563		SB HWY 99 AT FLORIN ROAD, #3 LANE		CHMIRS
UNINCORPORATED COUN	S105886080		NB I-5 JUST SOUTH OF LAGUNA		CHMIRS
UNINCORPORATED COUN	S106396740		SB I-5 SOUTH OF TWIN CITIES ROAD, SOUTH OF THE GAL		CHMIRS
UNINCORPORATED COUN	S107452883		NB I-5 NORTH OF HOOD FRANKLIN		CHMIRS
UNINCORPORATED COUN	S105668605		SB I-5 CROSS LAMBERT ROAD	UNK	CHMIRS
UNINCORPORATED COUN	S105674785		EB I-80 AT THE END OF THE MADISON AVE OFF RAMP		CHMIRS
UNINCORPORATED COUN	S105677326		NB I5 @ MPM 24.8 NEAREST TOWN IS SACRAMENTO		CHMIRS
UNINCORPORATED COUN	S105668606		SB I5 JUST NORTH OF TWIN CITIES		CHMIRS
UNINCORPORATED COUN	S106394033		NB I5 JUST SOUTH OF TWIN CITIES RD. NEAREST CITY I		CHMIRS
UNINCORPORATED COUN	S108401176		SB I5 JUST SOUTH OF STONECREST		CHMIRS
UNINCORPORATED COUN	S105677997		INTERSECTION OF BRUCEVILLE RD AND ESCHINGER RD.		CHMIRS
UNINCORPORATED COUN	S106395154		INTERSECTION OF ALBERTA AND E. LEVEE RD., NEAREST		CHMIRS
UNINCORPORATED COUN	S106400487		IRON POINT ROAD AT FOLSOM BLVD.		CHMIRS
UNINCORPORATED COUN	S105885486		16000 ISLETON ROAD AKA ISLETON BRIDGE		CHMIRS
UNINCORPORATED COUN	S108401178		9328 IZENBERG CIR.		CHMIRS
UNINCORPORATED COUN	S105666404		JACKSON RD AT S WATT		CHMIRS
UNINCORPORATED COUN	S108404480		JACKSON RD. AT CONSUMNES RIVER		CHMIRS
UNINCORPORATED COUN	S108405217		NB5 JSO TWIN CITIES RD SR 104		CHMIRS
UNINCORPORATED COUN	S105882438		N. KEIFER AT MAYHEW		CHMIRS
UNINCORPORATED COUN	S107452227		KEIFER WEST OF EAGLES NEST		CHMIRS
UNINCORPORATED COUN	S106400917		LAKEWOOD PARK DR. EAST OF TIOGAWOODS		CHMIRS
UNINCORPORATED COUN	S106393167		EAST LEVEE RD WEST OF ELK HORN BLVD (NATOMAS FIRE		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
UNINCORPORATED COUN	S108401424		8400 EAST LEVEE RD.		CHMIRS
UNINCORPORATED COUN	S107452431		MANUEL CARMO DAIRY, FRANKLIN BLVD SOUTH OF BILBY.		CHMIRS
UNINCORPORATED COUN	S105662364		MARTINEZ, MPM 98,		CHMIRS
UNINCORPORATED COUN	S106400318		MILE POST 61.5 FRESNO SUB.		CHMIRS
UNINCORPORATED COUN	S108401849		MILE POST 89 / 401 I ST.		CHMIRS
UNINCORPORATED COUN	S107452542		MILE POST 40 FRESNO SUB. DIV.		CHMIRS
UNINCORPORATED COUN	S105658213		2 MILES NORTH OF TWIN CITIES ROAD		CHMIRS
UNINCORPORATED COUN	S106394701		!.3 MILES SOUTH OF ROSEVILLE RD AT MILE POST MARKE		CHMIRS
UNINCORPORATED COUN	S106398310		MORRISON CREEK		CHMIRS
UNINCORPORATED COUN	S105662810		NEW HOPE RD AT HARVEY RD		CHMIRS
UNINCORPORATED COUN	S108401079		NORTHBOUND I5, 200' NORTH OF THE SAN JOAQUIN CO.		CHMIRS
UNINCORPORATED COUN	S105659812		OLD SACRAMENTO RIVER ACROSS FROM ISLETON		CHMIRS
UNINCORPORATED COUN	S105653209		ORANGE GROVE AND WATT AVE		CHMIRS
UNINCORPORATED COUN	S106400377		ORANGE GROVE AT PASADENA		CHMIRS
UNINCORPORATED COUN	S105656187		8138 OTIUM CT. ANTELOPE		CHMIRS
UNINCORPORATED COUN	S107450502		6045 PALMAGRANITE		CHMIRS
UNINCORPORATED COUN	S107451012		A PKWY. AT CENTER PKWY.		CHMIRS
UNINCORPORATED COUN	S105659021		PLACE HOLDER		CHMIRS
UNINCORPORATED COUN	S106395174		POWER INN SOUTH OF GERBER ROAD, BEHIND THE SHOPPIN		CHMIRS
UNINCORPORATED COUN	S105676301		PRIVATE CROSSING NEAR ELK GROVE		CHMIRS
UNINCORPORATED COUN	S106393970		PRIVATE CROSSING ABOUT 1 MI N OR THORNTON OFF NEW		CHMIRS
UNINCORPORATED COUN	S105663981		ROSEVILLE RD AT WALERGA		CHMIRS
UNINCORPORATED COUN	S105669631		ROSEVILLE RD JSO WATT AVE		CHMIRS
UNINCORPORATED COUN	S106400654		SAN JOAQUIN RIVER/SEVEN MILE SLOUGH, BRUNO'S ISLAN		CHMIRS
UNINCORPORATED COUN	S107453472		SAN JUAN AT FAIR OAKS BLVD		CHMIRS
UNINCORPORATED COUN	S105654336		SARGEANT RD AT LIVE OAK AV		CHMIRS
UNINCORPORATED COUN	S106398067		SECTION TOWNSHIP T 4 N R 4 E		CHMIRS
UNINCORPORATED COUN	S106397095		SHERMAN ISLAND, 5140 WEST SHERMAN ISLAND ROAD		CHMIRS
UNINCORPORATED COUN	S108405716		SHERMAN ISLAND LEVEE RD, NEAREST TOWN IS RIO VISTA		CHMIRS
UNINCORPORATED COUN	S106392948		EAST SIDE OF CLAY STATION RD, 1.5 MILES NORTH OF S		CHMIRS
UNINCORPORATED COUN	S105655170		SLOUGH HOUSE RD AT GRANT LINE RD		CHMIRS
UNINCORPORATED COUN	S106398639		7-MILE SLOUGH, SE OF RIO VISTA, CONTACT TERRY OR C		CHMIRS
UNINCORPORATED COUN	S106392532		SNODGRASS SLOUGH, ON LAMBERT ROAD, 1/4 MILE EAST O		CHMIRS
UNINCORPORATED COUN	S108404066		SOUTHBOUND 160 @ BRANNAN ISLAND RD. MPM 8.33		CHMIRS
UNINCORPORATED COUN	S108403153		1 SPORTS PARKWAY/ ARCO ARENA		CHMIRS
UNINCORPORATED COUN	S106394100		ON SR 16/JACKSON HIGHWAY, BETWEEN MAYHEW AND BRADS		CHMIRS
UNINCORPORATED COUN	S108404788		NB SR 99 AT MINGO RD.		CHMIRS
UNINCORPORATED COUN	S105668885		A ST. AT MCFARLAND		CHMIRS
UNINCORPORATED COUN	S105655194		STEAMBOAT SLOUGH		CHMIRS
UNINCORPORATED COUN	S105657251		E STOCKTON AT RANGEVIEW RD		CHMIRS
UNINCORPORATED COUN	S105655594		EAST STOCKTON RD, NORTH OF GRANTLINE RD		CHMIRS
UNINCORPORATED COUN	S106394572		SUBSTANCE WAS FOUND @ WHITEROCK AND FITZGERALD, AN		CHMIRS
UNINCORPORATED COUN	S107453800		SUN BONNET AT SPRING GLEN DR, NEAR CITRUS HEIGHTS		CHMIRS
UNINCORPORATED COUN	S106393011		SUNRISE BLVD AT INTERSECTION OF WHITE ROCK, DOWN S		CHMIRS
UNINCORPORATED COUN	S106399972		AT THE END OF ETHAN RD. SOUTH OF HURLEY AVE.		CHMIRS
UNINCORPORATED COUN	S106395428		TWIN CITIES RD. AT CHRISTIANSEN, NEAREST TOWN IS		CHMIRS
UNINCORPORATED COUN	S108403983		TWIN CITIES RD 2 MILES WEST OF I-5		CHMIRS

City	EDR ID	Site Name	Site Address	Zip	Database(s)
UNINCORPORATED COUN	S105653497		UPRR YARD - ANTELOPE / ROSEVILLE RD.		CHMIRS
UNINCORPORATED COUN	S105668537		7434 VERSAILLES ST CROSS ST OF DON JULIO		CHMIRS
UNINCORPORATED COUN	S105654594		W.6TH ST JNO STRAUGH RD		CHMIRS
UNINCORPORATED COUN	S105676025		WALNUT AT EL CAMINO		CHMIRS
UNINCORPORATED COUN	S106398446		WATER WORLD @1600 EXPOSITION BLVD., SACRAMENTO		CHMIRS
UNINCORPORATED COUN	S105883500		WATT AT ROSEVILLE RD		CHMIRS
UNINCORPORATED COUN	S105883197		WATT/ROSEVILLE ROAD. CLOSEST CITY IS SACRAMENTO.		CHMIRS
UNINCORPORATED COUN	S106398947		WEB TRACK ISLAND IN THE RIO VISTA GAS FIELD.		CHMIRS
UNINCORPORATED COUN	S105650753		SR16 WEST OF SUNRISE BLVD.		CHMIRS
UNINCWN	S100217628		FLORIN RD WEST OF SUNRISE BL	95	CHMIRS
UNKNOWN	93309397	HIGHWAY 116 WEST OF WATT AVE	HIGHWAY 116 WEST OF WATT AVE		ERNS
UNKNOWN	92267259	I-5 AT INTERSTATE 80	I-5 AT INTERSTATE 80		ERNS
UNKNOWN	94367342	BETWEEN KORTE HARBOR & HAPPY HARBOR IN SACRAMENTO DELTA	BETWEEN KORTE HARBOR & HAPPY HARBOR IN SACRAMENTO DELTA		ERNS
UNKNOWN	93342465	DILLARD RD & MEISS RD IN SLOUGH HOUSE AREA	DILLARD RD & MEISS RD IN SLOUGH HOUSE AREA		ERNS
UNKNOWN	94365433	3901 FAIR OAKS BLVD CROSS SAN RAMON ST	3901 FAIR OAKS BLVD CROSS SAN RAMON ST		ERNS
UNKNOWN	94367395	GRANT LINE RD NORTH OF DOUGLAS BLVD	GRANT LINE RD NORTH OF DOUGLAS BLVD		ERNS
UNKNOWN	92274897	HIWAY 160 NEAR THE "BEAN POT" REST	HIWAY 160 NEAR THE "BEAN POT" REST		ERNS
UNKNOWN	92263878	SB HWY 99, TWIN CITIES RD LAKE CANYON AVE AND BEAVER PARK	SB HWY 99, TWIN CITIES RD LAKE CANYON AVE AND BEAVER PARK		ERNS
UNKNOWN	93354254	LODI TO SOUTH OF SACRAMENTO	LODI TO SOUTH OF SACRAMENTO		ERNS
UNKNOWN	93353436	LODI TO SOUTH OF SACRAMENTO	LODI TO SOUTH OF SACRAMENTO		ERNS
UNKNOWN	92296096	NEAR FREEPORT BRIDGE, POSSIBLY FROM CLIFFS OR FREEPORT MARIN	NEAR FREEPORT BRIDGE, POSSIBLY FROM CLIFFS OR FREEPORT MARIN		ERNS
UNKNOWN	94365600	5829 PIONEER WAY	5829 PIONEER WAY		ERNS
UNKNOWN	92292595	SHERMAN ISLAND GALLEGER SLOUGH	SHERMAN ISLAND GALLEGER SLOUGH		ERNS
UNKNOWN	93319198	START SOUTH OF STOCKTON, DISCOVERED AT ROSEVILLE GOING NORTH	START SOUTH OF STOCKTON, DISCOVERED AT ROSEVILLE GOING NORTH		ERNS
UNKNOWN	94358013	8306 STEPHENSON RD	8306 STEPHENSON RD		ERNS
UNKNOWN	S108407351		UNKNOWN		CDL
W. SACRAMENTO	2006787474	3RD AND C ST.	3RD AND C ST.		ERNS
W. SACRAMENTO	2006813679	2895 INDUSTRIAL BLVD	2895 INDUSTRIAL BLVD		ERNS
WALNUT GROVE	S102436565	SCHAUER RIVER FRONT PROPERTY	14162 HIGHWAY 160		Sacramento Co. CS
WALNUT GROVE	8713629	DELTA HOUSE BOAT RENTALS	DELTA HOUSE BOAT RENTALS		ERNS
WALNUT GROVE	S105641240		IN FRONT OF ISLAND VIEW CT AND 1ST AVE		CHMIRS
WALNUT GROVE	S106345061	UPN/KMAX	1650 LEVEE		Sacramento Co. CS, Sacramento Co. ML
WALNUT GROVE	S105638154		1 MILE EAST OF RACE TRACK RD / TYLER ISLAND RD		CHMIRS
WALNUT GROVE	S101301037	FIVE STAR PETROLEUM	14170 RIVER RD		Sacramento Co. CS
WALNUT GROVE	S103427248	PUREGRO FACILITY #728	14442 THORNTON RD		Sacramento Co. CS
WALNUT GROVE	S105651552		14442 THORTON ROAD - WESTERN FARM SERVICE		CHMIRS
WALNUT GROVE	S104970719	SPINGOLO WAREHOUSE CO	14531 WALNUT GROVE-THORNTON RD		Sacramento Co. CS
WALNUT GROVE	S105653842		WALNUT GROVE MARINA		CHMIRS, Sacramento Co. ML
WALNUT GROVE	S105676138		WALNUT GROVE WASTE WATER TREATMENT PLANT		CHMIRS
WALNUT GROVE	S106394092		WALNUT GROVE WASTE WATER PLANT, 2500 FEET EAST OF		CHMIRS
WALNUT GROVE	91240368	200 YDS S OF GUSTY MARINA-MOKELUMNE RIVER OFF OLD WALNUT GRO	200 YDS S OF GUSTY MARINA-MOKELUMNE RIVER OFF OLD WALNUT GRO		ERNS

SACRAMENTO COUNTY, CA - ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
WEST SACRAMENTO	S105640049		JEFFERSON BLVD AND SO RIVER RD		CHMIRS
WEST SACRAMENTO	96494662	3961 CHANNAL	3961 CHANNAL		ERNS
WEST SACRAMENTO	96484233	LAKE WASHINGTON	LAKE WASHINGTON		ERNS
WEST SACRAMENTO	2006816007	PORT OF SACRAMENTO	PORT OF SACRAMENTO		ERNS
WEST SACRAMENTO	2002616004	SEA PORT AND ENTERPRISE	SEA PORT AND ENTERPRISE	0	ERNS
WILTON	S106396707		DILLARD AND WALMORT		CHMIRS
WILTON	S105646891		WILTON RD NORTHEAST OF GRANTLINE		CHMIRS
WOODLAND	200115872		215 N COUNTY RD 101		HMIRS

Section 4

EPA Waste Code Addendum

EPA Waste Codes Addendum

Code	Description
D001	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Section 5

Databases Searched and Update Dates

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 07/18/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/09/2007
Date Data Arrived at EDR: 09/05/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 36

Source: EPA
Telephone: N/A
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 43

Source: EPA
Telephone: N/A
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/23/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 70

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/19/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 06/21/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 37

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/26/2007
Date Data Arrived at EDR: 08/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/13/2006
Date Data Arrived at EDR: 06/28/2006
Date Made Active in Reports: 08/23/2006
Number of Days to Update: 56

Source: EPA
Telephone: (415) 495-8895
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 01/24/2007
Date Made Active in Reports: 03/12/2007
Number of Days to Update: 47

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 07/02/2007
Date Data Arrived at EDR: 07/18/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 62

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 703-603-8905
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 08/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 41

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 06/20/2007
Date Data Arrived at EDR: 07/09/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 51

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 04/13/2007
Date Data Arrived at EDR: 07/16/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 44

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 08/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 06/08/2007
Date Data Arrived at EDR: 07/03/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 57

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/08/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 82

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 09/19/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 69

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 09/18/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002
Date Data Arrived at EDR: 04/14/2006
Date Made Active in Reports: 05/30/2006
Number of Days to Update: 46

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/06/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 60

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 07/06/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 60

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 45

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Annually

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 08/14/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 43

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Varies

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/27/2007
Date Data Arrived at EDR: 08/13/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Quarterly

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 07/25/2007
Date Data Arrived at EDR: 07/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 72

Source: EPA, Region 9
Telephone: 415-972-3336
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Varies

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 01/08/2007
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 3

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 10/02/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 08/01/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 08/01/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/08/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 05/14/2007
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 04/12/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/24/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 56

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/09/2007
Date Data Arrived at EDR: 06/28/2007
Date Made Active in Reports: 08/29/2007
Number of Days to Update: 62

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/26/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/19/2007
Date Data Arrived at EDR: 07/25/2007
Date Made Active in Reports: 09/18/2007
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 03/06/2007
Date Made Active in Reports: 04/13/2007
Number of Days to Update: 38

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Biennially

USGS WATER WELLS: National Water Information System (NWIS)

This database consists of well records in the United States. Available site descriptive information includes well location information (latitude and longitude, well depth, site use, water use, and aquifer).

Date of Government Version: 03/25/2005
Date Data Arrived at EDR: 03/25/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: USGS
Telephone: N/A
Last EDR Contact: 03/25/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

PWS: Public Water System Data

This Safe Drinking Water Information System (SDWIS) file contains public water systems name and address, population served and the primary source of water

Date of Government Version: 02/24/2000
Date Data Arrived at EDR: 04/27/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA
Telephone: N/A
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: N/A

STATE AND LOCAL RECORDS

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 08/27/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: No Update Planned

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: No Update Planned

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/12/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 16

Source: Integrated Waste Management Board
Telephone: 916-341-6320
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

CA WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites). This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 05/29/2001
Date Made Active in Reports: 07/26/2001
Number of Days to Update: 58

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 10/11/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2007
Date Data Arrived at EDR: 08/01/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 8

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 10/03/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 07/10/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 10/11/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 10/11/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 07/17/2007
Date Data Arrived at EDR: 07/18/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 22

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Annually

UST: Active UST Facilities

Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 07/10/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 14

Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 10/11/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Semi-Annually

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 06/25/2007
Date Data Arrived at EDR: 06/26/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 29

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Varies

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 08/28/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 05/01/2007
Date Data Arrived at EDR: 05/01/2007
Date Made Active in Reports: 05/25/2007
Number of Days to Update: 24

Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

SWEEPS UST: SWEEPS UST Listing
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/23/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

NOTIFY 65: Proposition 65 Records
Proposition 65 Notification Records. NOTIFY 65 contains facility notifications about any release which could impact drinking water and thereby expose the public to a potential health risk.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: No Update Planned

DEED: Deed Restriction Listing
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 07/02/2007
Date Data Arrived at EDR: 07/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 10/03/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 07/31/2007
Date Data Arrived at EDR: 07/31/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 9

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/13/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 24

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 07/27/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 03/07/2007
Date Made Active in Reports: 04/06/2007
Number of Days to Update: 30

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Varies

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/20/2006
Date Made Active in Reports: 01/03/2007
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/04/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 04/17/2007
Date Made Active in Reports: 05/10/2007
Number of Days to Update: 23
Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 07/20/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: Varies

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 09/17/2007
Date Data Arrived at EDR: 09/18/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 10
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Varies

ENVIROSTOR: EnviroStor Database
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 08/28/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/29/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Quarterly

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/04/2005
Date Data Arrived at EDR: 01/21/2005
Date Made Active in Reports: 02/28/2005
Number of Days to Update: 38
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 34
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 09/12/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/14/2007
Date Made Active in Reports: 07/05/2007
Number of Days to Update: 21
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

Date of Government Version: 08/31/2007
Date Data Arrived at EDR: 08/31/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 41
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

A listing of underground storage tank locations on Indian Land.

Date of Government Version: 12/01/2006
Date Data Arrived at EDR: 12/01/2006
Date Made Active in Reports: 01/29/2007
Number of Days to Update: 59

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 34

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land

Date of Government Version: 09/05/2007
Date Data Arrived at EDR: 10/02/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 9

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Semi-Annually

INDIAN UST R10: Underground Storage Tanks on Indian Land

Date of Government Version: 09/12/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 10/11/2007
Number of Days to Update: 27

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Quarterly

INDIAN UST R5: Underground Storage Tanks on Indian Land

Date of Government Version: 12/02/2004
Date Data Arrived at EDR: 12/29/2004
Date Made Active in Reports: 02/04/2005
Number of Days to Update: 37

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 08/20/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

FEDERAL RECORDS

COLLEGES: Integrated Postsecondary Education Data

The National Center for Education Statistics' primary database on integrated postsecondary education in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/12/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

PUBLIC SCHOOLS: Public Schools

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/13/2004
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education statistics
Telephone: 202-502-7300
Last EDR Contact: 10/10/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: N/A

PRIVATE SCHOOLS: Private Schools of the United States

The National Center for Education Statistics' primary database on private school locations in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/07/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: National Center for Education Statistics
Telephone: 202-502-7300
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

NURSING HOMES: Directory of Nursing Homes

Information on Medicare and Medicaid certified nursing homes in the United States.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/11/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: N/A
Telephone: 800-568-3282
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

MEDICAL CENTERS: Provider of Services Listing

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health & Human Services.

Date of Government Version: 06/01/1998
Date Data Arrived at EDR: 11/10/2005
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
Last EDR Contact: 01/12/2007
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

HOSPITALS: AHA Hospital Guide

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/19/1994
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: American Hospital Association
Telephone: 800-242-2626
Last EDR Contact: 09/22/2006
Next Scheduled EDR Contact: N/A
Data Release Frequency: N/A

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 50

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 08/03/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 48

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 07/23/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 09/11/2007
Date Data Arrived at EDR: 09/14/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 14

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Semi-Annually

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 07/16/2007
Date Data Arrived at EDR: 07/17/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 23

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 08/06/2007
Next Scheduled EDR Contact: 11/05/2007
Data Release Frequency: Semi-Annually

KERN COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 06/20/2007
Date Data Arrived at EDR: 06/21/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 07/07/1999
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 07/16/2007
Next Scheduled EDR Contact: 10/15/2007
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 05/31/2007
Date Data Arrived at EDR: 08/27/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 30

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 08/17/2007
Date Data Arrived at EDR: 09/24/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 4

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 08/17/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 07/11/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 29

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 09/20/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 05/14/2007
Date Data Arrived at EDR: 05/15/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 41

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 08/13/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 08/23/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 05/29/2007
Date Data Arrived at EDR: 05/29/2007
Date Made Active in Reports: 06/25/2007
Number of Days to Update: 27

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 11/12/2007
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 05/08/2007
Date Data Arrived at EDR: 06/08/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 47

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 07/30/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 09/24/2007
Date Data Arrived at EDR: 09/25/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 3

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Semi-Annually

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 07/24/2007
Date Data Arrived at EDR: 07/27/2007
Date Made Active in Reports: 09/07/2007
Number of Days to Update: 42

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Annually

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 10

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 10

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 06/01/2007
Date Data Arrived at EDR: 06/19/2007
Date Made Active in Reports: 07/25/2007
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 08/31/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 07/23/2007
Date Data Arrived at EDR: 07/23/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 17

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 08/06/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 50

Source: Department of Public Health
Telephone: 951-358-5055
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 08/06/2007
Date Data Arrived at EDR: 08/07/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 48

Source: Health Services Agency
Telephone: 951-358-5055
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Contaminated Sites

List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/07/2007
Date Data Arrived at EDR: 08/08/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 49

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

ML - Regulatory Compliance Master List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/07/2007
Date Data Arrived at EDR: 08/08/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 49

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/31/2007
Next Scheduled EDR Contact: 10/29/2007
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 06/27/2007
Date Data Arrived at EDR: 06/29/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 41

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2005
Date Data Arrived at EDR: 05/18/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 29

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 10/05/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 11/01/2006
Date Data Arrived at EDR: 01/03/2007
Date Made Active in Reports: 01/24/2007
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 06/27/2007
Date Data Arrived at EDR: 07/20/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 20

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 10/03/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Varies

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/07/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 21

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 09/07/2007
Date Data Arrived at EDR: 09/07/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 17

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 09/04/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 08/21/2007
Date Data Arrived at EDR: 08/22/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 33

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory

List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 07/30/2007
Date Data Arrived at EDR: 07/30/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 10

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Annually

Fuel Leak List

A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/10/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 30

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/26/2007
Date Data Arrived at EDR: 03/27/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Varies

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 09/17/2007
Date Data Arrived at EDR: 09/17/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 11

Source: City of San Jose Fire Department
Telephone: 408-277-4659
Last EDR Contact: 09/17/2007
Next Scheduled EDR Contact: 12/03/2007
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 6

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 08/03/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 52

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/24/2007
Next Scheduled EDR Contact: 12/24/2007
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 07/09/2007
Date Data Arrived at EDR: 07/09/2007
Date Made Active in Reports: 08/09/2007
Number of Days to Update: 31

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 07/09/2007
Next Scheduled EDR Contact: 10/22/2007
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 05/04/2007
Date Data Arrived at EDR: 05/04/2007
Date Made Active in Reports: 05/24/2007
Number of Days to Update: 20

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 10/01/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 05/30/2007
Date Data Arrived at EDR: 06/22/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 7

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 08/01/2007
Date Data Arrived at EDR: 08/29/2007
Date Made Active in Reports: 09/26/2007
Number of Days to Update: 28

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/21/2007
Next Scheduled EDR Contact: 11/19/2007
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/05/2007
Date Data Arrived at EDR: 06/21/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 8

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 06/26/2007
Date Data Arrived at EDR: 07/27/2007
Date Made Active in Reports: 09/07/2007
Number of Days to Update: 42

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/11/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 07/30/2007
Date Data Arrived at EDR: 09/04/2007
Date Made Active in Reports: 09/24/2007
Number of Days to Update: 20

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 10/15/2007
Next Scheduled EDR Contact: 01/14/2008
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 06/15/2007
Date Made Active in Reports: 08/20/2007
Number of Days to Update: 66

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 09/12/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 04/01/2007
Date Data Arrived at EDR: 04/05/2007
Date Made Active in Reports: 05/08/2007
Number of Days to Update: 33

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 12/31/2007
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 08/27/2007
Date Data Arrived at EDR: 08/30/2007
Date Made Active in Reports: 09/21/2007
Number of Days to Update: 22

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 08/30/2007
Next Scheduled EDR Contact: 11/26/2007
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 08/23/2007
Date Made Active in Reports: 09/27/2007
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 09/10/2007
Next Scheduled EDR Contact: 12/10/2007
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 04/09/2007
Date Data Arrived at EDR: 04/12/2007
Date Made Active in Reports: 04/27/2007
Number of Days to Update: 15

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 10/16/2007
Next Scheduled EDR Contact: 12/17/2007
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 04/27/2007
Date Made Active in Reports: 06/08/2007
Number of Days to Update: 42

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 10/09/2007
Next Scheduled EDR Contact: 01/07/2008
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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Appendix I

Correspondence Regarding Cultural Resources

Jones & Stokes

March 12, 2008

Rumsey Indian Rancheria of Wintun
Marshall McKay, Chairperson
PO Box 18
Brooks, Ca 95606

Dear Mr. McKay,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

Yolo County:

- Sacramento West, T 9, 8N; R 4E: unsectioned
- Clarksburg, T 8, 7, 6N; R 3E: unsectioned
- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

The State of California Native American Heritage Commission (NAHC) has given us your name on a list of Native American contacts for Yolo and Solano Counties. Additionally, the NAHC has assisted us with a search of their sacred land files, which did not show the presence of any Native American cultural resources in any of the project area. We would appreciate any comments you may have identifying any resources, issues or concerns pertaining to this project.

2600 V Street • Sacramento, CA 95818-1914 • tel. 916 737.3000 • fax 916 737.3030
www.jonesandstokes.com

A comprehensive record search is being conducted at the Northwest Information Center of the California Historical Resources Information System. Jones & Stokes will also conduct cultural resources surveys for any previously unsurveyed areas.

Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Kesner Flores
PO Box 1047
Wheatland, Ca 95692

Dear Kesner Flores,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

The State of California Native American Heritage Commission (NAHC) has given us your name on a list of Native American contacts for Yolo and Solano Counties. Additionally, the NAHC has assisted us with a search of their sacred land files, which did not show the presence of any Native American cultural resources in any of the project area. We would appreciate any comments you may have identifying any resources, issues or concerns pertaining to this project.

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Cortina Band of Indians
Elaine Patterson, Chairperson
PO Box 1630
Williams, Ca 95987

Dear Ms. Patterson,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Clarksburg, T 8, 7, 6N; R 3E: unsectioned
- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

The State of California Native American Heritage Commission (NAHC) has given us your name on a list of Native American contacts for Yolo and Solano Counties. Additionally, the NAHC has assisted us with a search of their sacred land files, which did not show the presence of any Native American cultural resources in any of the project area. We would appreciate any comments you may have identifying any resources, issues or concerns pertaining to this project.

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Cortina Band of Indians
Karen Flores, Vice Chairperson
PO Box 1630
Williams, Ca 95987

Dear Ms. Flores,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

The State of California Native American Heritage Commission (NAHC) has given us your name on a list of Native American contacts for Yolo and Solano Counties. Additionally, the NAHC has assisted us with a search of their sacred land files, which did not show the presence of any Native American cultural resources in any of the project area. We would appreciate any comments you may have identifying any resources, issues or concerns pertaining to this project.

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Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Ione Band of Miwok Indians
Matthew Franklin, Chairperson
PO Box 1190
Ione, Ca 95640

Dear Mr. Franklin,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Ione Band of Miwok Indians
Heritage Cultural Committee
PO Box 1190
Ione, Ca 95640

Dear Heritage Cultural Committee Members,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

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- Rio Vista, T 5N; R 2E: unsectioned

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Wilton Rancheria
Mary Daniels- Tarango, Chairperson
7916 Farnell Way
Sacramento, Ca 95823

Dear Ms. Daniels-Tarango,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

The State of California Native American Heritage Commission (NAHC) has given us your name on a list of Native American contacts for Yolo and Solano Counties. Additionally, the NAHC has assisted us with a search of their sacred land files, which did not show the presence of any Native American cultural resources in any of the project area. We would appreciate any comments you may have identifying any resources, issues or concerns pertaining to this project.

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www.jonesandstokes.com

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Rumsey Indian Rancheria of Wintun
Cynthia Clarke, Native Cultural Renewal Committee
PO Box 18
Brooks, Ca 95606

Dear Ms. Clarke,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

Solano County:

- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

The State of California Native American Heritage Commission (NAHC) has given us your name on a list of Native American contacts for Yolo and Solano Counties. Additionally, the NAHC has assisted us with a search of their sacred land files, which did not show the presence of any Native American cultural resources in any of the project area. We would appreciate any comments you may have identifying any resources, issues or concerns pertaining to this project.

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www.jonesandstokes.com

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Rumsey Indian Rancheria of Wintun
Leland Kinter, Native Cultural Renewal Committee
PO Box 18
Brooks, Ca 95606

Dear Mr. Kinter,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

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- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

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Again, we welcome any information or comments you may have in regards to this project area. Thank you for your assistance with this project.

Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Wintun Environmental Protection Agency
PO Box 1839
Williams, Ca 95987

Dear Wintun Environmental Protection Agency members,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

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- Liberty Island (con't.), T 5N; R 3E: unsectioned
- Rio Vista, T 5N; R 2E: unsectioned

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Sincerely,

Traci O'Brien

Traci O'Brien
Senior Archaeologist
(916) 737-3000

Jones & Stokes

March 12, 2008

Wilton Rancheria
Leland Daniels, Cultural Resources Representative
7531 Maple Leaf Lane
Sacramento, Ca 95828

Dear Mr. Daniels,

Jones & Stokes is assisting the City of West Sacramento and the West Sacramento Flood Control Agency (WSFCA) with cultural resources compliance for an environmental impact report to be prepared for the proposed West Sacramento Levee Improvements Program. The Program area includes a 500-foot corridor along the entire WSFCA boundaries which encompass portions of the Sacramento River, the Yolo Bypass, the Sacramento Bypass, and the Sacramento Deep Water Ship Channel (see attached map). The project area is located on USGS 7.5' quadrangles as listed below from North to South:

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- Liberty Island, T 6N; R 3E: unsectioned

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Sincerely,

Traci O'Brien

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Senior Archaeologist
(916) 737-3000