Meeting of the Central Valley Flood Protection Board
August 26, 2011

Staff Report – Howe Ave Levee Improvement EA/IS

US Army Corps of Engineers (USACE)
American River Common Features Project, Sacramento County

BOARD ACTION

Consider approval of Resolution No. 11-22 (Attachment A) to:

1. Adopt the Mitigated Negative Declaration (Attachment B), Findings (Attachment B) and Mitigation Monitoring Plan (Attachment C) for the Howe Ave Levee Improvement Project and delegate authority to the Executive Officer to execute the Notice of Determination;
2. Approve the Howe Ave Levee Improvement Project

SPONSORS

The Howe Ave Levee Improvement Project, part of the American River Common Features Project, is a cooperative effort between the US Army Corps of Engineers (USACE), the State of California (CVFPB), and the Sacramento Area Flood Control Agency (SAFCA).

LOCATION AND BACKGROUND

The project is located on the right (north) bank of the American River in the City of Sacramento, and extends 4,200 linear feet from River Mile 7.9 at the Howe Ave Bridge to RM 8.7. The Howe Ave Levee Improvement Project is one of many segments in the American River Common Features Project with the goal of increasing the American River's capacity to 160,000 cubic feet per second (cfs) plus three feet of freeboard to accommodate modifications to the Folsom Dam through the American River Watershed, Folsom Dam Modifications project.

The American River Watershed Common Features Project was initially described in the Supplemental Information Report and was first authorized in Water Resources Development Act (WRDA) of 1996 and modified in WRDA 1999. The State authorized the American River Watershed Common Features Project in 1997 under California Water Code Sections 126710, 12670.14 and 12670.16.

The American River Watershed Common Features, as modified by Water Development Act of 1999, Howe Ave Levee Improvement Project is a cooperative effort among the US Army Corps of Engineers, the Central Valley Flood Protection Board and the

Sacramento Area Flood Control Agency. The project is one of five modifications approved by WRDA 1999.

The American River Watershed Common Features Project, California, Lower American River Features as modified by WRDA 1999, Environmental Assessment Initial Study was completed in April 2002. The Howe Ave portion of the EA/IS is now being updated in this Environmental Assessment/Initial Study (EA/IS).

This EA/IS describes the existing environmental resources in the project area, evaluates the environmental effects of the alternatives on these resources, and identifies measures to avoid or reduce any effects to less than significant. This EA/IS has been prepared in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

DESCRIPTION

The project will raise the levee approximately 1 foot to meet current USACE criteria in USACE EM 1110-2-1913 for withstanding emergency releases from Folsom Dam of 160,000 cubic feet per second (cfs) with 3 feet of freeboard. The approval of the Howe Ave Levee Improvement EA/IS is a necessary step to begin the real estate recertification process necessary to award a construction contract in FY2011.

Approval of the EA/IS for the Howe Ave Levee Improvement Project will allow construction to begin in summer 2012 with contract award in September 2011. The work would involve raising the levee height between .5 – 1.5 feet with an average of one foot for a distance of approximately 4,200 LF. To keep the levee slope compliant with USACE regulations, the overall width of the levee would increase three to five feet on the waterside. The levees are currently designed to hold a flow of 160,000 cfs, but lack the freeboard necessary to protect against wind and wave action. The levee raise will bring the levee up to standards, and allow the river to pass an emergency release of 160,000 cfs, plus three feet of freeboard (equivalent to 192,000 cfs).

Construction of the proposed levee raise will begin in summer 2012 and last approximately two months. The directional flow of the construction activities is likely to progress from upstream to downstream. After the entire reach has been cleared and grubbed, remaining earthwork will likely be conducted in 500 foot segments.

A total of approximately 11,410 cubic yards (cy) of soil will be excavated from the waterside slope of the levee. The soil will be reused along with approximately 18,000 cy of borrow material to reconstruct the levee to USACE levee standards. Upon levee construction completion, aggregate base material will be reinstalled on the levee surface to provide for the maintenance road.

Once all levee work is complete, all equipment and excess material will be transported offsite via neighborhood streets and regional highways. Barren earthen and levee slopes will be reseeded with native grasses to promote re-vegetation and minimize soil

erosion. The access ramps will be restored to pre-project conditions and the staging area will be reseeded. Any and all damage to the residential streets and bike trails caused by construction activities will be repaired, and all work sites and staging area will be cleaned and restored to conditions suitable to the setting of the area.

PROPOSED CEQA FINDINGS

Based on the information in the Environmental Assessment and Initial Study for the American River Watershed Common Features Project Lower American River Features as Modified by the Water resources Development Act of 1999, Howe Avenue Levee improvement Project and in the entire record, the Central Valley Flood Protection Board finds that although the Project could have a significant impact on the environment, mitigation measures have been incorporated into the Project that reduces these impacts to less than significant.

STAFF RECOMMENDATION

CVFPB Staff recommends that the board approve Resolution No. 11-22 to adopt the Mitigated Negative Declaration, Findings and Mitigation Monitoring Plan and delegate the authority to the Executive Officer to sign the Notice of Determination for the Howe Ave Levee Improvement Project; and approve the Howe Ave Levee Improvement Project.

LIST OF ATTACHMENTS

A. Resolution No. 11-22: Howe Ave Levee Improvements Element
B. Environmental Assessment/Initial Study, Mitigated Negative Declaration, Finding of No Significant Impact
C. Mitigation Monitoring Plan

STATE OF CALIFORNIA
THE RESOURCES AGENCY
CENTRAL VALLEY FLOOD PROTECTION BOARD
RESOLUTION 11-22
AMERICAN RIVER WATERSHED COMMON FEATURES PROJECT, CALIFORNIA
LOWER AMERICAN RIVER FEATURES AS MODIFIED BY WATER RESOUCES DEVELOPMENT ACT OF 1999
HOWE AVENUE LEVEE IMPROVEMENTS ELEMENT

WHEREAS, the Central Valley Flood Protection Board, (Board) is the non-federal sponsor and California Environmental Quality Act (CEQA) lead agency for the American River Watershed Common Features Project, California, Lower American River Features as Modified by the Water Resources Development Act of 1999, Howe Avenue Levee Improvements Element, (Project) and the U.S. Army Corps of Engineers (USACE) is the federal sponsors and lead agency under the National Environmental Policy Act (NEPA) and Sacramento Area Flood Control Agency (SAFCA) is the local sponsor and responsible agency under CEQA; and

WHEREAS, Congress authorized levee improvements known as American River Watershed Common Features Project in the Water Resources Development Act (WRDA) of 1996, (Public Law 104-303); and

WHEREAS, the State authorized the American River Watershed Common Features Project in 1997 under California Water Code Sections 12670.10, 12670.14 and 12670.16; and

WHEREAS, Congress authorized modifications to the American River Watershed Common Features Project in Section 366 of WRDA 1999, (Public Law 106-53) called the Lower American River Features which included the raising of the levee on the right (north) bank of the American River near Howe Avenue and Northrop Avenue, raising the left bank levee near Mayhew Drain and the Mayhew Drain Closure Structure, and levee strengthening near the Natomas East Main Drainage Canal and the right bank of the Lower American River near Jacob Lane, and

WHEREAS, in 2001 the USACE and the Board prepared and circulated a draft Environmental Assessment/Initial Study (EA/IS) with Findings of No Significant Impact/ draft Mitigated Negative Declaration for American River Watershed Common Features Project, California, Lower American River Features as Modified by the Water Resources Development Act of 1999, (WRDA 1999 Project) for public review; and

WHEREAS the Board re-circulated the EA/IS, adopted the Mitigated Negative Declaration and approved the WRDA 1999 Project excluding the Mayhew features which were analyzed in a separate EIS/EIR, in November, 2006; and

WHEREAS, the USACE determined that one reach of the levee on the north bank of the American River could not pass 160,000 cfs of water; and

WHEREAS the work necessary to correct the deficiencies and the associated environmental impacts on the north bank of the Lower American River near the Howe Avenue Element, have been further defined; and

WHEREAS a draft EA/IS and a draft Mitigated Negative Declaration for the Project were circulated for public review from June 9, 2009 to July 8, 2009; and

WHEREAS, comments on the draft EA/IS have been received and responses prepared and included in a Final EA/IS; and

WHEREAS, the Board has considered the Final EA/IS and finds that on the basis of the whole record, including comments received on the draft EA/IS, and mitigation measures that have been included in the Project, there is no substantial evidence that the proposed Project will have a significant effect on the environment, and that the Mitigated Negative Declaration reflects the independent judgment and analysis of the Board.

NOW, THEREFORE, BE IT RESOLVED that the Board

1. 1. Adopts the Mitigated Negative Declaration, Findings and Mitigation Monitoring Plan and delegates the authority to the Executive Officer to sign the Notice of Determination for the Howe Ave Levee Improvement Project;

2. 2. Approves the American River Watershed Common Features Project, California, Lower American River Features, Howe Avenue Levee Improvement

By: _____ Date: _____

Benjamin F. Carter
President

By: _____ Date: _____
Francis Hodgkins
Secretary

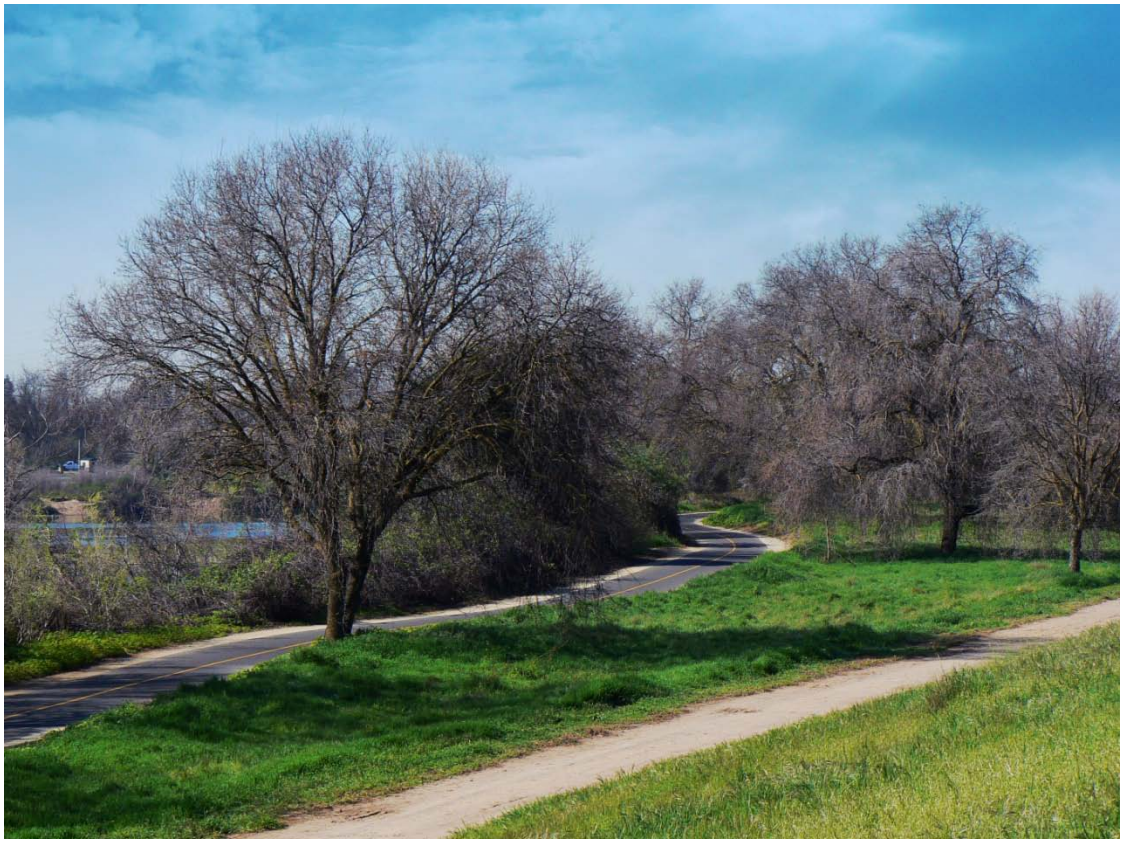
Approved as to Legal Form and Sufficiency

By: _____ Date: _____
Jeremy Goldberg
Staff Counsel

FINAL
ENVIRONMENTAL ASSESSMENT/
INITIAL STUDY

AMERICAN RIVER COMMON FEATURES
LOWER AMERICAN RIVER FEATURES
AS MODIFIED BY WRDA 1999
HOWE AVENUE LEVEE IMPROVEMENT PROJECT

JULY 2011



US Army Corps of Engineers

Central Valley Flood Protection Board

SAFCA Sacramento Area Flood Control Agency

Approved for public release, distribution is unlimited.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

Environmental Resources Branch

FINDING OF NO SIGNIFICANT IMPACT
American River Watershed Common Features Project
Lower American River Features as Modified by WRDA 1999
Howe Avenue Levee Improvement Project

I have reviewed and evaluated the information presented in this Environmental Assessment/Initial Study (EA/IS) prepared for the American River Watershed Common Features, Lower American River Features, Howe Avenue Levee Improvement Project. The project would strengthen the flood control levees at the project area along the lower American River in the City of Sacramento. The repair work would involve raising the levee height an average of one foot which would also result in increasing the overall width of the levee between three to five feet.

During this review, the possible consequences of the work described in the EA/IS have been studied with consideration given to environmental, socioeconomic, cultural, and engineering feasibility. I have also considered the views of other interested agencies, organizations, and individuals. The environmental effects have been coordinated with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, California State Historic Preservation Officer, the California Department of Fish and Game, the Department of Water Resources, the Central Valley Flood Protection Board, and the Sacramento Area Flood Control Agency.

Impacts to recreation and traffic would be minimized through detour routes, public coordination, and best management practices. The levee maintenance road will be closed to pedestrians and directed onto the bike path. The construction equipment footprint would require minor trimming of trees along the American River Parkway and the removal of two cottonwood trees along University Park. Mitigation for removal of the trees would require plantings of native species at the park. Sensitive species have been surveyed for and avoidance measures will be used to reduce potential impacts to less than significant. All areas disturbed by construction would be re-vegetated for erosion control. Compensation measures and best management practices are sufficient to reduce any potential effects to air quality, vegetation, valley elderberry longhorn beetle habitat, Swainson's hawks and White-tailed kite nests to less than significant.

No significant impacts on resources would result from the project. Best management practices, avoidance protocols, minimization and mitigation measures would be used during construction to reduce effects related to sensitive biological resources, air quality, water quality, cultural resources, noise and utility systems.

Based on my review of the EA/IS and my knowledge of the project area, I have determined the proposed levee repair work, including access routes and staging areas, would have no significant, long-term effects on environmental or cultural resources. Based on these considerations, I am convinced that there is no need to prepare an environmental impact statement. Therefore, an EA and Finding of No Significant Impact provide adequate environmental documentation for the proposed action.

_____ _____

Date

William J. Leady, P.E.
Colonel, U.S. Army
District Engineer

MITIGATED NEGATIVE DECLARATION
AMERICAN RIVER WATERSHED COMMON FEATURES PROJECT
CALIFORNIA
LOWER AMERICAN RIVER FEATURES AS MODIFIED BY WATER RESOURCES DEVELOPMENT ACT OF 1999
HOWE AVENUE LEVEE IMPROVEMENT PROJECT

Project Background

The American River Watershed Common Features Project was initially described in the Supplemental Information Report and was first authorized in Water Resources Development Act (WRDA) of 1996 and modified in WRDA 1999. The State authorized the American River Watershed Common Features Project in 1997 under California Water Code Sections 12670.10, 12670.14 and 12670.16

The American River Watershed Common Features as Modified by Water Development Act of 1999, Howe Avenue Levee Improvement Project (Project) is a cooperative effort among the U.S. Army Corps of Engineers, the Central Valley Flood Protection Board and the Sacramento Area Flood Control Agency. The project is one of five modifications approved by WRDA 1999.

Project Location

The Project is located on the right (north) bank of the American River in the City of Sacramento. The Project extends 4,200 linear feet from River Mile 7.9 at the Howe Avenue Bridge to RM 8.7

Project Description

The project would raise the levee by about 1 foot to meet current levee standards that require levees on the American River to safely pass 160,000 cfs with three feet of freeboard.

Potential Impacts

Recreation
Impacts to recreation would be temporary.
The waterside maintenance road will be closed for public safety and construction vehicles would intersect with the Jedediah Smith Recreational Trail at a couple of locations.

These impacts will be mitigated by installing warning signs, and posting detours where there may be restricted access, traffic controls where necessary and fencing of construction areas. Implementation of these mitigation measures will reduce impacts to less than significant.

Vegetation and Wildlife

The Project would not have a significant effect on vegetation and wildlife. A few trees on the waterside of the levee may need to be removed. Replacement trees at a ratio determined by US Fish and Wildlife will be planted within University Park in case any trees would need to be removed.

Special Status Species

Valley Elderberry Longhorn Beetle (VELB)
The project could have a significant direct and indirect impact to several elderberry shrubs, the habitat of VELB. A total of 36 elderberry shrubs, all located at the downstream end of the Project could be indirectly affected. The following mitigation measures based on Fish and Wildlife Services' "Conservation Guidelines for the Valley Elderberry Longhorn Beetle" July 1999, will be implemented:

- A minimum setback of 100 feet from the dripline of all elderberry shrubs will be established if at all possible. If the 100-foot minimum buffer zone is not possible the next maximum distance allowable will be established. Due to the limited options for locating the staging area, as well as the limited space within the staging area, it would be difficult to observe the required 100-foot radius buffer zone for protection of the elderberry shrubs. The Corps will establish a 20-foot radius buffer zone around the elderberry bushes, using concrete barriers for protection. Construction will be limited until after the no-disturbance period (after June 15). The area will be fenced, flagged and maintained during construction.

- All workers will receive environmental awareness training before work begins. The training will include status, the need to avoid adversely affecting the elderberry shrub, avoidance areas and measures that should be taken by the workers during construction and contact information.

- Signs will be placed every 50 feet along the edge of the elderberry buffer zones. The signs will include the following text: "This habitat is the 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." The signs will be readable from a distance of 20 feet and will be maintained during construction.

- The placement of barriers to protect elderberry shrubs adjacent to the construction areas shall be completed prior to construction activities.

The implementation of these mitigation measures will reduce any impact to VELB to less-than-significant.

Sensitive raptors

Swainson's hawk, White-tailed kite and Cooper's hawk may be present in the area and may nest near the construction site. Surveys will determine whether a nest could be affected. Construction will be timed as much as possible to avoid activities near active nests, and the Department of Fish and Game will be consulted on appropriate measures to avoid affecting the nests.

Implementation of these mitigation measures will reduce any impact to special statue raptors to less-than-significant.

Air Quality

Emissions would result from the use of construction equipment, truck haul trips to and from the borrow sites, and worker vehicle trips to and from the construction sites. Prior to construction, the contractor would submit a construction equipment list to be used in the project for approval by USACE and SMAQMD. SMAQMD would confirm the fleet emissions and endorse the list only if the total fleet emissions would meet a 20% reduction in NOx and a 45% reduction in PM10 in comparison to the state fleet emissions average. The contractor will be required to follow the requirements of SMAQMD's standard mitigation program (Appendix B). Any remaining emissions over the NOx threshold should be reduced via a mitigation fee payment. The projected (2012) cost of reducing one ton of NOx is $16,640 ($8.32/lb). The contractor will be responsible for payment of any required mitigation and administrative fees.

The emissions of unmitigated NOx, primarily from off-road construction equipment, would be above the significant threshold for construction; therefore, additional mitigation would need to be applied. The standard mitigation measures for the SMAQMD Recommended Mitigation for Reducing Emissions from Heavy-Duty Construction Vehicles are:

- Use diesel-fueled equipment manufactured in 2003 or later, or retrofit equipment manufactured prior to 2003 with diesel oxidation catalysts.

- Maintain properly functioning emission control devices on all vehicles and equipment.

- The contractor would provide a plan, for approval by the Corps and SMAQMD, demonstrating that the heavy-duty (> 50 horsepower) self-propelled off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction; and

- The contractor shall submit to the Corps and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

- The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and [DERA, City of x, SMAQMD, etc.] shall be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles

surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other SMAQMD or state rules or regulations.

- If at the time of construction, the SMAQMD has adopted a regulation applicable to construction emissions, compliance with the regulation may completely or partially replace this mitigation. Consultation with SMAQMD prior to construction will be necessary to make this determination.

Implementation of the BMP's below would reduce air quality degradation caused by dust and other contaminants:

- During construction, implement all appropriate dust control measures, such as tarps or covers on dirt piles, in a timely and effective manner during construction.

- Periodically water all construction areas having vehicle traffic, including unpaved areas, to reduce the generation of dust. Application of water should not be excessive or result in runoff into storm drains.

- Suspend all grading, earth moving, or excavation activities when winds exceed 20 miles per hour.

- Water or cover all material transported offsite to prevent the generation of dust.

- Sweep paved streets adjacent to the construction site, as necessary, at the end of each day to remove excessive accumulations of dust.

- Cover all trucks hauling dirt, sand, soil or other loose material, or maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with requirements of California Vehicle Code Section 23114. This provision would be enforced by local law enforcement agencies.

- Revegetate or pave areas cleared by construction in a timely manner to control fugitive dust.

Any affects to air quality will be temporary, and mitigation measures would reduce impacts to less than significant.

Water Resources and Quality

The project would have a potential but short-term impact to water quality. The following best management practices will ensure that the Project will have a less-than-significant impact to water resources and water quality:

- The contractor will prepare a spill control plan and a SWPPP prior to initiation of construction. The SWPPP will be developed in accordance with guidance from the RWQCB, Central Valley Region. These plans will be reviewed and approved by the USACE before construction began.

- Implement appropriate measures to prevent debris, soil, rock and other material from entering the water. Use a water truck or other appropriate measures to control dust on haul roads, construction areas, and stockpiles.

- Properly dispose of oil and other liquids.

- Fuel and maintain vehicles in a specific area designed to capture spills. This area cannot be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water.

- Inspect and maintain vehicles and equipment to prevent dripping of oil or other liquids.

- Schedule construction to avoid the rainy season as much as possible. If rains are forecasted, implement erosion control measures will be implemented.

- Train construction workers in storm water pollution prevention practices.

- Revegetate disturbed areas in a timely manner to control erosion.

Traffic and circulation

The Project would temporarily affect residential streets and major urban connector roads used as haul rote during construction.

Implementing the following mitigation measures will ensure that impacts to traffic and circulation would be less-than-significant.

- The contractor will be required to develop a Traffic Control Plan.

- Construction vehicles cannot block any roadways or private driveways.

- Provide access to emergency vehicles at all times.

- Haul routes should avoid schools, parks and high pedestrian use areas when possible. Crossing guards will be used when truck trips coincide with school hours and when haul routes cross student travel path

- Obey all traffic laws.

- Flagmen will be used at each roadway that crosses the levee to safely circulated traffic through the construction site.

- Use separate entrances and exits to the construction area.

- Notify local residents, businesses, schools and the City of Sacramento if road closures would occur.

- Repair roads damaged by construction.

Noise and Vibrations

Construction of the Project could have a significant impact. Implementation of the following mitigation measures will reduce this impact to less than significant.

- Limit construction activities between 6:00 a.m. and 8:00 p.m. Mondays through Fridays and 7:00 a.m. and 8:00 p.m. on Saturdays and Sundays.

- Muffle construction equipment noise by shielding intakes and exhaust on construction equipment and shroud or shield impact tools.

- Turn off all equipment and vehicles when not in use for more than 30 minutes.

- Notify residents about the type and schedule of the construction.

Cultural resources

No cultural resources are anticipated to be affected by the Project. Should cultural resources be found, the Project will comply with federal law and CEQA Guidelines.

Findings

Based on the information in the Environmental Assessment and Initial Study for the American River Watershed Common Features Project Lower American River Features as Modified by the Water resources Development Act of 1999, Howe Avenue Levee improvement Project and in the entire record, the Central Valley Flood Protection Board finds that although the Project could have a significant impact on the environment, mitigation measures have been incorporated into the Project that reduce these impacts to less than significant.

By: _____ Date: _____
Benjamin F. Carter
President

By: _____ Date: _____
Francis “Butch” Hodgkins
Secretary

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

THE CENTRAL VALLEY FLOOD PROTECTION BOARD
STATE OF CALIFORNIA

SACRAMENTO AREA FLOOD CONTROL AGENCY
SACRAMENTO, CALIFORNIA

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Plates

Appendixes

Acronyms and Abbreviations

AAQS	Ambient Air Quality Standards
APE	Area of Potential Effects
ARFCD	American River Flood Control District
CAR	Fish and Wildlife Coordination Act Report
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CESA	California Endangered Species Act
cfs	Cubic Feet per Second
CFR	Code of Federal Regulations
CO	Carbon monoxide
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRWQCB	California Regional Water Quality Control Board
CSU	California State University
cy	Cubic Yards
CVFPB	Central Valley Flood Protection Board
dB	decibels
dbh	Diameter at Breast Height
DFG	Department of Fish and Game
DOT	Department of Transportation
DWR	Department of Water Resources
EA/IS	Environmental Assessment/Initial Study
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EM	Engineering Manual
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FONSI	Finding of No Significant Impact
HTRW	Hazardous, Toxic, and Radioactive Waste
Ldn	day-night sound level
lf	Linear Feet
NEMDC	Natomas East Main Drainage Canal
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOx	Nitrogen oxide
NPDES	National Pollution Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PA	Programmatic Agreement
PL	Public Law
PM_{10}	Particulate Matter 10 microns or larger
RM	River Mile

ROG	Reactive Organic Gas
RWQCB	Regional Water Quality Control Board
SAFCA	Sacramento Area Flood Control Agency
SCB	Soil, cement, bentonite
SEIS/EIR	Supplemental Environmental Impact Statement/Environmental Impact Report
SFNA	Sacramento Federal Ozone Nonattainment Area
SHPO	State Historic Preservation Officer
SIR	Supplemental Information Report
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO	Sulfur oxides
SPCP	Spill Prevention and Countermeasure Plan
SRA	Shaded Riverine Aquatic Habitat
SRBPP	Sacramento River Bank Protection Project
SSWD	Sacramento Suburban Water District
SWPPP	Storm Water Pollution Prevention Plan
USA	Underground Service Alert
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VELB	Valley Elderberry Longhorn Beetle
WRDA	Water Resources Development Act

1.0 Purpose and Need for Action

1.1 Proposed Action

The U.S. Army Corps of Engineers (Corps), the State Central Valley Flood Protection Board, (CVFPB), formerly the Reclamation Board, and the Sacramento Area Flood Control Agency (SAFCA) propose to raise and strengthen about 4,200 feet of flood control levee along the lower American River in the American River Parkway (Plate 1). The purpose of the proposed action is to reduce flood damages by improving the levee to meet current Corps standards. This levee work would require raising the levee height between .5-1.5 feet with an average of one foot to comply with Corps requirements. This will also result in increasing the overall width of the levee between 3 to 5 feet on the waterside toe. This construction would reduce flood risk by improving the levee to meet current Corps criteria in Corps EM 1110-2-1913 for withstanding emergency releases from Folsom Dam of 160,000 cubic feet per second (cfs) with 3 feet of freeboard (equivalent to 192,000 cfs).

1.2 Location of the Project Area

The proposed work is located on the right (north) bank of the lower American River near California State University Sacramento between Howe Avenue and Watt Avenue (Plate 2). The downstream end of the reach terminates at Howe Avenue (approximately River Mile (RM) 7.9) and extends upstream 4,200 linear feet (LF) (RM 8.7).

1.3 Background and Need for Action

The American River Common Features Project (Common Features Project) is a cooperative effort among local, State of California, and Federal agencies to increase the level of flood protection for the city of Sacramento and surrounding areas. The Common Features Projects encompass several actions under two authorizations (Water Resources Development Act (WRDA) 96 and WRDA 99) located along both banks within the lower American River Parkway as well as sections along the Sacramento River. They have been constructed by the U.S. Army Corps of Engineers (Corps) and the Reclamation Board of the State of California, and maintained by the American River Flood Control District (ARFCD).

In March 1996, the Corps and the Board completed the Supplemental Information Report (SIR) and Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) for the American River Project. The SIR was undertaken to develop supplemental information to the American River Watershed Investigation, April 1991. The SIR evaluated an array of alternatives to provide increased flood control to the Sacramento area. The Chief of Engineers, in his June 27, 1996 report, deferred a decision on a comprehensive flood control plan. However, the Chief recommend the features common to all three proposed plans be authorized as the first component of a comprehensive flood control plan for the Sacramento area. Although the Federal

Administration did not make a recommendation to Congress, these "common features" were included in the Water Resources Development Act (WRDA) of 1996.

Major storms in northern California caused record flood flows in 1986, 1995, 1997, 1998, and 2005 in the American River Basin. Outflows from Folsom Reservoir, together with high flows in the Sacramento River, caused water levels to rise above the safety margin for the levees protecting the Sacramento area. These major storms raised concerns over the adequacy of the existing flood control system, which led to a series of investigations of the need to provide additional protection for Sacramento. Subsequently, further modifications of the American River Common Features Project were authorized in the WRDA of 1999. Under Section 366 of WRDA 1999 numerous specific modifications to the Common Features Project along the lower American River and in the Natomas Basin were authorized. Those modifications along the lower American River included:

- Raising the left bank of the non-Federal levee upstream of the Mayhew Drain for a distance of 4,500 feet by an average of 2.5 feet.
- Raising the right bank of the American River levee from 1,500 feet upstream to 4,000 feet downstream of the Howe Avenue Bridge by an average of 1 foot.
- Installing gates to the existing Mayhew Drain culvert to prevent backup of flood water on the Folsom Boulevard side of the gates.
- Installing a slurry wall in the north levee of the American River from the east levee of the Natomas East Main Drainage Canal upstream for a distance of about 1.2 miles.
- Installing a slurry wall in the north levee of the American River from 300 feet west of Jacob Lane north for a distance of about 1 mile to the end of the existing levee.

The project levees in this area of the American River were originally constructed by the Corps in 1955-56 which coincided with the construction of Folsom Dam. The levees were designed to contain a controlled flow of 115,000 cfs from Folsom Dam. In the early 1950's when these criteria were developed, this dam was expected to provide the Sacramento area with a 250 year level flood protection. Due to increased data, it has been determine that the dam will not provide that level protection. Flood control capacity could be increased if releases of greater than 115,000 cfs were allowed, but the levees on the American River are not capable of handling the greater flow for any extended time period. As a result from continued efforts in levee improvements through the American River Common Features Projects the integrity of the levee system has increased to handle an increased flow from Folsom Dam.

In 2001 the Corps performed a geotechnical reevaluation on the project area and released its findings in a report titled "American River WRDA 99 Common Features Right Bank Levee Strengthening Near Jacob's Lane". The report determined the levee in reach could not pass a flow of 160,000 cubic feet per second (cfs) with three feet of freeboard without putting excessive pressure on the levee. The work currently proposed

to be constructed in this reach will help resolve these problems and bring the levee in the project area up to current standards.

1.4 Authority

The proposed levee work is part of the ongoing American River Watershed Common Features project. Authorization for the Common Features project is provided by Section 101 of Water Resources Development Act of 1996 (WRDA) (Public Law 104-303) and Section 366 of WRDA 1999 (Public Law 106-53).

1.5 Purpose of the EA/IS

The American River Watershed Common Features Project, California, Lower American River Features as Modified by the Water Resources Development Act of 1999, Environmental Assessment Initial Study was completed in April 2002. The Howe Avenue portion of the EIS is now being updated in the EA/IS.

This Environmental Assessment/Initial Study (EA/IS) (1) describes the existing environmental resources in the project area, (2) evaluates the environmental effects of the alternatives on these resources, and (3) identifies measures to avoid or reduce any effects to less than significant. This EA/IS has been prepared in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

1.6 Decisions Needed

The District Engineer, commander of the Sacramento District, must decide whether or not the proposed levee work qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether a supplemental EIS must be prepared. Also, the Central Valley Flood Protection Board (CVFPB) must decide if the proposed action qualifies for a Mitigated Negative Declaration under CEQA or whether an EIR must be prepared.

2.0 Alternatives

2.1 Alternatives Eliminated from Further Consideration

The topographic and metropolitan features of the project area limit alternative project options. The project area is situated in a narrow corridor between the American River Parkway and Sacramento area neighborhoods, schools, and other residential features. The purpose of the project is to protect these residential areas from flood damages by improving the levee to meet current Corps standards.

Rather than raising and widening the levees, other alternatives that could be considered include setting back the levee in order to widen the flood plain. This alternative is not a feasible option because of the current proximity of the levee to the

local residential area. There is currently no land available within the project area for constructing a set-back levee.

Another option includes protecting the residential properties themselves to prevent flood damages. Considering the high population within the flood plain, and the number of houses that would need to be flood-proofed, this alternative is considered extremely costly and was eliminated from further consideration.

A more detailed evaluation of alternatives for the American River Watershed Common Features Project can be found in the final EA/IS dated March 2002.

2.2 No Action Alternative

Under this alternative, the Corps would not participate in constructing the levee improvements. Levee conditions would remain the same and the levee would not meet the current standard requirements in EM 1110-2-1913 for Corps levees. The levee would not be in compliance with current Corps requirements to safely pass an emergency release of 160,000 cubic feet per second (cfs) with 3 feet of freeboard.

2.3 Proposed Levee Improvements

This section describes the proposed action. This includes a discussion of features, construction details, staging and stockpile area, borrow and disposal sites, construction workers and schedule, and operation and maintenance for each reach.

Features

The work would involve raising the levee height between .5-1.5 feet with an average of one foot for a distance of approximately 4,200 LF. To keep the Corps required levee slope, the overall width levee would increase three to five feet on the waterside. The levees are currently designed to hold a flow of 160,000 cfs, but do not have the necessary freeboard to protect against wind and wave action. Current levee standards require levees on the American River be capable of safely passing an emergency release of 160,000 cfs, plus three feet of freeboard, for a total flow capacity of 192,000 cfs. This levee raise will bring the levee up to standards, and allow the river to pass an emergency release of 160,000 cfs, plus three feet of freeboard.

Construction Details

Access and Staging. The Kadema Drive access ramp will be the upstream access for construction. The direction of the haul route will be a clockwise loop with trucks travelling from American River Drive to Kadema Drive where they will enter the project area via the Kadema ramp. Once the vehicles have moved downstream, they will exit the site at the downstream end by using the access ramp adjacent to Howe Avenue. This ramp exits onto University Drive where the trucks will continue back to American River Drive (Plate 2). As haul trucks leave the site, a flagman will direct construction traffic on

to University Avenue. The Kadema access ramp and levee maintenance road would be closed to pedestrians for safety reasons. The bike trail would remain open and would have temporary fencing adjacent to the project boundary and the bike trail to protect its users from construction activities.

The primary staging area will be located at the downstream end of the reach near Howe Avenue (Plate 3). In this section, there is a flat, open grasslands area on the waterside of the levee between the levee and the bike trail. Construction materials, equipment, topsoil and excess material could be temporarily stored in the staging area during the construction period. The area will be restored as described below.

Site Preparation. Before the start of construction, all construction areas would be fenced off to limit access, including the staging area. Construction fencing would be installed on the landside of the project site adjacent to the residential property lines and along the boundary of the access/haul road at the waterside toe for site safety and security. In any areas where the bike trail is in the vicinity of the project footprint, concrete barriers would be installed along the edge of the trail in order to separate recreationists from the construction area. All trees and elderberry shrubs in the construction area would be tagged and protected with concrete barriers. A 15-20 foot wide corridor for construction equipment will be established along the waterside toe of the levee. Some trees will require minimal trimming and any trees adjacent to the equipment corridor will be protected in place with concrete barriers. The access ramp near Howe Avenue would need to be widened to accommodate the haul trucks, two cottonwood trees may need to be removed due to their close proximity to the access ramp.

Construction of the levee raise would require that 3 to 6 inches of the levee crown and waterside slope be cleared and grubbed of all vegetation and surface material. This would total approximately 6,070 cubic yards (cy) of removed material and would be disposed by the contractor at an approved site.

Construction of Levee Raise. Construction is scheduled to begin in summer 2012. The duration of the construction period should last approximately two months. The directional flow of the construction activities is likely to progress from upstream to downstream. After the entire reach has been cleared and grubbed, the remaining earthwork would likely be conducted in 500 foot segments.

In order to “key-in” the new soil for the levee raise, a total of approximately 11,410 cy of soil would be excavated from the waterside slope of the levee (Plate 4). This soil will be reused and be delivered by dump truck on the top of the levee and then redistributed. The levee would then be reconstructed, using a combination of the excavated soil, and approximately 18,000 cy of borrow material and would be compacted to Corps levee standards. Once levee construction is completed, aggregate base material would to be reinstalled on the levee surface to provide for the maintenance road.

Restoration and Cleanup. Once the levee work is completed, all equipment and excess materials would be transported offsite via neighborhood streets and regional highways. The barren earthen and levee slopes would be reseeded with native grasses to promote re-vegetation and minimize soil erosion. The access ramps will be restored to pre-project conditions and the staging area would be reseeded. Any damage to the residential streets and bike trails from construction activities would be repaired. Finally, the work sites and staging areas would be cleaned of all rubbish, and all parts of the work area would be left in a safe and neat condition suitable to the setting of the area.

Borrow and Disposals Sites

The project in this reach would require approximately 18,000 cy of borrow material. It is reasonable to assume the material will be acquired from sites along the Highway 50 corridor within 10 to 15 miles of the project site. Similarly, it is assumed the disposal sites for excess materials or spoils will be located within 10 to 15 miles of the project site. The contractor is responsible for determining the location of borrow and disposal sites, however, they must be approved by the Corps.

The haul route would use American River Drive and Kadema Drive to access the upstream end of the reach and the waterside levee maintenance roads to access the downstream end of the reach. Both University Avenue and American River Drive will allow access to Watt Avenue and Highway 50.

Construction Workers and Schedule

An estimated 4 to 5 workers would be onsite each day during construction. These workers would access the area via regional and local roadways, and park their vehicles in the staging area located at the downstream end of the reach near Howe Avenue. Construction hours would be limited to the hours from 7:00 a.m. to 6:00 p.m. Monday through Saturday, and from 9:00 a.m. to 6 p.m. on Sundays. Construction is projected to begin summer 2012 and should last approximately two months.

Operation and Maintenance

After construction is completed, responsibility for the project would be turned over to the CVFPB, the non-Federal sponsor for the project. This would include operation, maintenance, repair, rehabilitation, and replacement of all project features. The CVFPB Board would transfer these responsibilities to SAFCA, who would contract the American River Flood Control District (ARFCD) to operate and maintain the levee. Regular maintenance activities include mowing and herbicide treatments of the levee slops, controlling rodents, clearing the maintenance road, and inspecting the levee.

3.0 Affected Environment and Environmental Consequences

This section describes the environmental resources in the project area, as well as any effects of the alternatives on those resources. When necessary, mitigation measures are also proposed to avoid, reduce, minimize, or compensate for any significant effects.

3.1 Environmental Resources Not Considered in Detail

Initial evaluation of the effects of the project indicated that there would likely be little to no effect on several resources. These resources are discussed below to add to the overall understanding of the project area.

3.1.1 Climate

The climate of the area is characterized by cool, wet winters and hot, dry summers. The average yearly temperature for Sacramento is 61° Fahrenheit (F) with an average high of 74°F and an average low of 48°F. The hottest months are June through September and the coldest months are November through January (Weatherbase 2008).

Most of the seasonal rainfall occurs in two or three of the winter months. Precipitation ranges from 16 to 20 inches on the valley floor. Annual precipitation occurs almost entirely during the winter storm season (November to April). The prevailing wind direction in the Lower American River basin is from the south and southeast from April to September and from the north from October to March.

The project would have no effect on the climate in the project area.

3.1.2 Topography, Geology, and Soils

The lower American River area consists of low rolling foothills and flood plain areas near the confluence with the Sacramento River. The floor of the Sacramento Valley is generally flat and open with little natural relief. Flood control levees provide the only significant topographic relief in or near the project area.

Geologic formations underlying the Sacramento Valley include igneous, metamorphic, and sedimentary rock types, which range in age from pre-cretaceous to recent. The valley is situated on vast alluvial deposits which have slowly accumulated over the last 100 million years. The materials have been derived from the surrounding uplands; transported by major streams; and deposited in successive clay, silt, sand, and gravel layers on the valley floor.

The lower American River area is part of the Great Valley Geomorphic province of California. The broad valley was filled with erosion debris that originated in the surrounding mountains. Most soils in the area are recent alluvial flood plain soils consisting of unconsolidated deposits of clay, silt, and sand that occur as flood plain deposits. Fresh alluvium is deposited with each floodflow.

Sedimentation rates in the American River basin and adjacent river basins are relatively low due to limited development, the general shallowness of soils, a low rate of upstream erosion, and numerous containment basins. Sedimentation in the river is also controlled by Folsom and Nimbus Dams. Estimates of the annual sediment yield range from 0.1 to 0.3 acre-foot per square mile. As a result, the channel is in a state of degradation and sedimentation is not causing a reduction in channel conveyance or levee stability. Since the completion of Folsom Dam in 1955, only about 2 percent of the reserved sediment storage space in the reservoir has been filled.

The work proposed primarily consists of earth work, as the surface of the levee would be cleared and grubbed of the immediate surface material. All suitable excavated soil material would be reused in the project, and any unsuitable material would be disposed offsite at a commercial landfill. Soil material would be brought to the site to widen the levee crown and increase the height of the levee. Areas temporarily disturbed by construction would be returned to pre-project conditions after construction. Barren areas would be seeded with native grasses to reduce the potential for erosion except the levee crown where the aggregate base will be reinstalled.

The change in levee width and levee height is not a significant change to the project area topography. The project would not affect project area geography. The removal or import of soil material for the levee construction would not significantly affect the soil condition in the project area. The project would not alter flows within the channel, nor would it promote sedimentation downstream.

3.1.3 Land Use and Socioeconomics

A detailed discussion of socioeconomics (population, housing, and the economy) and land use are presented in the 1996 SEIS/EIR. The project area is located within the Sacramento metropolitan area. The predominant land use in the area is residential, with some commercial, industrial, and public land also included in the project area. The project would not result in any long-term changes in land use or socioeconomics in the area. The residential development adjacent to the levee in both reaches would remain the same, and the staging areas would be returned to pre-project uses after construction.

As directed in Executive Order 12898, all Federal agencies must identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no minority, low-income populations or homeless encampments that would be disproportionately affected by the proposed action. All nearby residents would benefit equally from the project.

3.1.4 Fisheries

Fisheries and fish habitat is associated with the American River and vegetation along its shoreline. The Central Valley steelhead distinct population segments (DPS) and its habitat is present on the lower American River and adjacent to the project reach. Construction would take place on the levee crown and the approximate 20-foot area adjacent to the waterside toe of the levee. The closest the American River channel gets to the project area is approximately 100 feet There would be no construction in or near the American River. The contractor would be required to develop and submit a Storm Water Pollution Prevention Plan (SWPPP) to minimize the potential for soil or contaminants to enter the river. Erosion/sediment controls such as hay bales, straw wattles and silt fencing would be utilized to prevent soil from entering the river. Water trucks will be used to for dust suppression along all areas of disturbed soil and along the haul route on the top of the levee. The contractor will not be allowed to store fuels, lubricants or other potential hazardous substances on site. If equipment is to be refueled on site, the contractor will take measures to avoid and contain any spills. The contractor will be required to develop and submit a Spill Prevention and Countermeasure Plan (SPCP) prior to initiating construction activities. The SWPPP and SPCP must be approved by the Corps. No riparian habitat would be affected by construction. This project would have no effect on fisheries, fish habitat or shaded riverine aquatic (SRA) habitat.

3.1.5 Hazardous and Toxic Waste

A Phase I environmental site assessment was conducted to identify and evaluate potential hazardous and toxic waste issues in and near the project area. The purpose of the Phase I was to review available documentation regarding past and current land use activities to assess the possible presence of hazardous substances and wastes. The site assessment was completed in April 2009 and concluded that there is no apparent hazardous and toxic waste contamination within the study area. If any evidence of hazardous and toxic waste had been found, then more detailed studies including field sampling and analysis would have been conducted to determine the nature and extent of any hazardous and toxic waste.

3.2 Recreation

3.2.1 Existing Conditions

The project area is located along the north bank of the lower American River within the American River Parkway. The American River Parkway consists of a 5,000-acre regional park along the riparian corridor stretching from the confluence with the Sacramento River upstream to Folsom Lake. The Parkway is valuable regional resource which attracts bicyclists, runners, walkers, horseback riders and rafters. The Sacramento County Department of Regional Parks (County Parks) is the agency with primary responsibility over the American River Parkway.

The lower American River is a federally designated and state-designated Wild and Scenic River. The lower American River was included in the federal and state Wild and Scenic Rivers systems because of some or all of its fisheries, wildlife, scenic, and recreational values, but primarily its recreation and anadromous fishery values

The primary recreational feature within the Parkway which could be affected by the project is the Jedediah Smith Recreation Trail, which provides bicycle, pedestrian, and equestrian trails from Discovery Park to Folsom Lake. The trail also connects with the Sacramento River Trail and Old Sacramento State Historic Park, and many people use it daily to commute to work by bicycle into Downtown Sacramento. The levee crown is covered with a compacted aggregate base material that is also used for pedestrian recreational activities.

Within the project boundary there is no vehicular access for recreationists into the American River Parkway. There are two formal locations where pedestrians and bikers may access the Jedediah Smith Recreation Trail. The upstream access point is at the maintenance ramp at Kadema Drive. The other is at the downstream end of the reach at University Park adjacent to Howe Avenue.

3.2.2 Environmental Effects

Basis of Significance

Effects to recreational resources are considered significant if construction would result in any of the following:

- Eliminate or severely restrict access to recreational facilities and resources.
- Result in substantial long-term disruption of use of an existing recreation facility.
- Inconsistency with the state or federal Wild and Scenic Rivers Act.

No Action Alternative

Under this alternative, the levee improvement project would not be constructed; therefore there would be no effects on recreation. The bike trail and levee roads would remain open, and there would be no changes to the project area.

Proposed Levee Improvements

Construction of the levee raise would have short-term effects on recreational use in the American River Parkway. The road on the top of the levee would be closed to pedestrian access during the two month construction period. There would be no effects on the equestrian trails within the American River Parkway.

There are potential impacts to recreation on the Jedediah Smith Recreation Trail. The two access points; the Kadema access point and the access ramp at University Park, will be closed to pedestrians for safety reasons. There are several areas between the Kadema access point and Howe Avenue in which the bike trail boundaries are adjacent to the project footprint. In order to limit the effects on the bike trail and allow the trail to remain open, concrete barriers and/or fencing would be temporarily installed adjacent to the edge of the bike trail. They will be set back as far as possible from the edge of the bike trail to avoid potential collusions. The barriers will protect the bike trail and it's users from the construction activities.

However, this will require closing off the waterside toe maintenance road to pedestrian use due to equipment and truck traffic. Although this is not a formal feature of the Jedediah Smith Recreational Trail, it gets frequent use by pedestrians who walk to avoid the traffic on the bicycle trail.

The closure of the waterside maintenance road will be necessary for safety reasons. Pedestrians will be encouraged, through the use of concrete barriers and/or fencing, to use the shoulder of the bicycle trail in this section during the construction period.

3.2.3 Mitigation

In order to mitigate for effects to the recreation trail use, measures would be taken to keep the public informed of the project. To ensure public safety, warning signs and signs restricting access would be posted before and during construction, as necessary. Detour routes would be clearly marked, and fences erected in order to prevent access to the project area.

In areas where recreational traffic intersects with construction vehicles, traffic control will be utilized in order to maintain public safety. Public outreach will be conducted through mailings, posting signs, coordination with interested groups, and meetings, if necessary, in order to provide information regarding changes to recreational access in and around the Parkway.

Any effects to recreation would be temporary and considered less than significant. Therefore, no further mitigation would be required.

3.3 Vegetation and Wildlife

3.3.1 Existing Conditions

There are five major plant communities and cover types in the project area: ruderal herbaceous, ornamental landscaping, developed areas, riparian forest and scrub, and open water (American River). A plant community is a natural or human influenced assemblage of plants that have common characteristics and can be easily identified by key species. These communities and associated wildlife are described below. Sensitive

native communities are considered native-diverse communities that are regionally uncommon or of special concern to Federal, State, and local resource agencies. The riparian forest and scrub, and open water habitats are considered sensitive native communities. Due to their local significance native oak trees are separately addressed.

Ruderal Herbaceous**.** Ruderal herbaceous community is a native community that occurs in the project area. This community is located on the levee slopes and landside area between the levee and fences of the nearby residential homes. Areas of ruderal herbaceous community also occur in the waterside area between the levee and the American River.

This community is dominated by annual grasses such as ripgut brome (*Bromus diadrus*), wild oat (*Avena fatua*), and forbs including horsetail (*Equisetum hyemale*). Ruderal herbaceous community provides cover and foraging habitat for resident and migratory songbirds, small mammals, and reptiles.

The ruderal herbaceous community within the project area is predominantly limited to the grasses on the waterside slopes of the levee. The grasses occur as a result of restoration from previous levee projects and they are mowed as part of the maintenance program by ARFCD to reduce wildfire danger.

Ornamental Landscape**.** Ornamental landscape community is a nonnative community that occurs within the project area primarily near residential homes. Most of the vegetation in this community is nonnative vegetation used to landscape lawns, backyards, and parks. Vegetation type and size are managed by landowners and is usually disturbed by maintenance practices and artificial irrigation. Some of this vegetation is trimmed by ARFCD while performing maintenance along the landside easement. This community provides nesting, cover, and foraging habitat for resident and migratory songbirds, and other wildlife species that have become adapted to urban areas.

Developed Areas**.** Nonnative communities occur in areas developed for urban use in the project area. Developed areas include sidewalks, roadways, buildings, driveways, parking lots, and recreation trails. This cover type provides little to no habitat for wildlife, and has little to no vegetation and ground cover.

Riparian Forest and scrub**.** Riparian forest and scrub is a native community that occurs in the project area. This community consists of forested areas and underbrush habitat along the American River. This community includes native and nonnative trees, shrubs, vines, and brush in a narrow band along the river. There is no riparian habitat with in the project boundary.

Open Water. The American River is located approximately 100 feet south of the reach and is well outside the construction footprint. There are no wetlands in the project area.

Native Oak Trees**.** The Sacramento County Ordinance, Chapter 19.12, Tree Preservation and Protection (Oak tree ordinance), regulates the removal or disturbance to all species of oak trees native to Sacramento County. These species include valley oak, interior live oak, blue oak, oracle oak, and black oak. The ordinance applies to any native oak trees immediately within, or adjacent to the project area. Typically, only trees 6 inches in diameter at breast height (dbh), or greater, are protected. In the project area there are 43 Valley Oaks and 10 Live Oaks at various sizes from less than 4 inches to 39 inches in diameter. A few trees may require minor trimming.

3.3.2 Environmental Effects

Basis of Significance

A project would significantly affect vegetation and wildlife if it would in comparison to the no-action baseline: (1) significantly reduce the amount of native vegetation and wildlife habitat in the project area to a point that native wildlife could not live or survive in the project area, or (2) permanently remove or disturb sensitive native communities.

No Action

Under the No Action alternative, the affected levee reach would continue to be maintained by local levee maintenance districts. Maintenance activities typically include mowing and herbicide treatment to the levee slopes to regulate vegetation growth. Under this alternative the proposed project would not be built. There would be no change to the native vegetation or wildlife in the project area; however, emergency actions taken to prevent flooding in the possible event of levee failure may result in loss of vegetation.

Construct Levee Improvements

Several trees along the waterside toe of the levee will require minimal trimming as some small tree limbs overhang in the project boundary. The branches will be cut back enough to avoid damage by levee construction equipment and trucks. The pruning will be conducted by or under the direct supervision of a certified arborist. The downstream access ramp adjacent to Howe Avenue at University Park may require that two cottonwood trees be removed to widen the access ramp to accommodate the haul trucks. The trees are 6” to 8” dbh and the City of Sacramento has requested that mitigation plantings be placed elsewhere within University Park. The mitigation planting will follow the recommendations proposed by the US Fish and Wildlife Service (USFWS) in their Fish and Wildlife in the Coordination Act Report.

3.3.3 Mitigation

Mitigation has been coordinated with the USFWS as required by the Fish and Wildlife Coordination Act. Since the tree trimming will be minor and no limbs of significant size will be cut, no mitigation will be required for trimming these trees.

USFWS has recommend that the project replace the cottonwood trees removed along the access ramp at University Park at an inch for inch ratio. All tree trimming activities will be preformed by or under the direct supervision of a certified arborist.

3.4 Special Status Species

3.4.1 Existing Conditions

Regulatory Setting

Certain special status species and their habitats are protected by Federal, State, or local laws and agency regulations. The Federal Endangered Species Act (FESA) of 1973 (50 CFR 17) provides legal protection for plant and animal species in danger of extinction. This act is administered by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The California Endangered Species Act (CESA) of 1977 parallels FESA and is administered by the California Department of Fish and Game (CDFG). Other special status species lack legal protection, but have been characterized as "sensitive" based on policies and expertise of agencies or private organizations, or policies adopted by local government. Special-status species are those that meet any of the following criteria:

- Listed or candidate for listing under the Federal Endangered Species Act of 1973 (50 CFR 17).
- Listed or candidate for listing under the California Endangered Species Act of 1977.
- Nesting bird species and active nests of birds listed under the Migratory Bird Treaty Act.
- Species listed in the Bald and Golden Eagle Protection Act.
- Fully protected or protected species under stated DFG code.
- Wildlife species of special concern listed by the DFG.
- Plant species listed as Rare under the California Native Plant Protection Act.
- Plant species listed by the California Native Plant Society.
- Species protected by local ordinances such as the Sacramento County Ordinance, Chapter 19.12, Tree Preservation and Protection.
- Species protected by goals and policies of local plans such as the American River Parkway Plan, which includes anadromous and resident fishes, as well as migratory and resident wildlife.
- Essential Fish Habitat listed under the Magnuson-Stevens Act.
- Essential Fish Habitat is defined in the Magnuson-Stevens Act as ". . . those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The act requires that Federal agencies consult with the National Marine Fisheries Service when any activity proposed to be permitted, funded, or undertaken by a Federal agency may have adverse effects on designated Essential Fish Habitat.

3.4.2 Special Status Species Evaluation

A list of Federally listed and candidate species, and species of concern that may be affected by projects in USGS quads Carmichael and East Sacramento was obtained on March 25th 2009 via the FWS website. In addition, a search of the California Natural Diversity Database (CNDDB) conducted on March 25th 2009 indicated no state or federal listed species were reported within the project boundaries. However, the CNDDB report showed a Swainson's hawk (*Buteo swainsoni*) nest within 350 feet of the project boundary. The USFWS and CNDDB lists are included in Appendix A. Elderberry shrubs (*Sambucus sp.*) were also identified within the project area. Although the site is not designated as critical habitat for the valley elderberry longhorn beetle (VELB) (*Desmoceros californicus dimorphus*), the shrubs are the sole host plant for the beetle. The FWS conducted an elderberry survey on March 30th, 31st and April 20th 2009. Due to the change in schedule for construction in 2012 and additional survey was conducted on June 7, 2011.

Special-status species that were not identified as occurring or having habitat in the project area are not discussed further in this document. The following federal and state listed terrestrial special-status species were identified as having the potential to occur in the vicinity of the project area and be impacted by construction activities:

- Coopers Hawk (State Species of Concern);
- Swainson's Hawk (State Threatened);
- Valley elderberry longhorn beetle (Federal Threatened) and Critical Habitat;
- White-Tailed Kite (CDFG Fully Protected).

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is endemic to the riparian habitats in the Sacramento and San Joaquin Valleys where it resides on elderberry (*Sambucus* spp.) plants. The beetle's current distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield (USFWS 1984). The beetle is a pith-boring species that depends on elderberry plants during its entire life cycle. The beetle tends to be located in population clusters that are not evenly distributed across the Central Valley (Barr, 1991). In October 2006, the USFWS recommended, based on a review of the species status, it be delisted, however, the USFWS has taken no formal action as yet.

The Parkway, with an abundance of elderberry shrubs in a well-connected corridor, provides high quality habitat for the VELB. A total of 36 elderberry shrubs were identified along the reach during biological surveys conducted on March 30th, 31st and April 20th 2009. It is assumed many more elderberry shrubs exist in this section of the parkway, however, only those shrubs located within 100 feet of the affected project area were surveyed in accordance with FWS survey protocols. As a part of their recovery

plan, the Service has concluded that two areas in Sacramento County should be designated Critical Habitat for VELB based on the densest know population of the beetle. The project area is not located within critical habitat.

White-tailed Kite

White-tailed kite (*Elanus leucurus*) is a common to uncommon, yearlong resident in coastal and valley lowlands and is rarely found away from agricultural areas. However, it does inhabit herbaceous and open stages of most habitats, mostly in cismontane California. The main prey of white-tailed kite is voles and other small, diurnal mammals, but it occasionally preys on birds, insects, reptiles, and amphibians. White-tailed kite forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Nests are made of loosely piled sticks and twigs and lined with grass, straw, or rootlets and placed near the top of a dense oak, willow, or other tree stand; usually 6-20 m (20-100 ft) above ground. Nests are located near open foraging areas in lowland grasslands, agricultural areas, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. White-tailed kite are recorded as occurring in several locations along the American River and the riparian habitat in the vicinity of the project area provides suitable nesting habitat for this species. The nearest record of nesting white-tailed kite in CNDDB was recorded on March 13, 1988 and is located a mile and a half northwest of the project area along the American River. However, raptor surveys performed in April 2009 found two White-tail Kite nests within a half mile radius of the project boundary.

Swainson's hawk

Swainson's hawk (*Buteo swainsoni*) is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and the Mojave Desert. Swainson's hawk breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley and forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Swainson's hawks breed in California and over winter in Mexico and South America. Swainson's hawks usually arrive in the Central Valley between March 1 and April 1, and migrate south between September and October. Swainson's hawks nest usually occur in trees near the edges of riparian stands, in lone trees or groves of trees in agricultural fields, and in mature roadside trees. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Suitable foraging areas for Swainson's hawk include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Swainson's hawks primarily feed on voles; however, they will feed on a variety of prey including small mammals, birds, and insects.

A raptor survey of the project area conducted April 24th 2009 located a Swainson's hawk nest on the left (south) side of the American River and is approximately 350 feet from the project area. Construction of the project has now been scheduled for Summer 2012. Additional raptor surveys will be conducted in Spring 2012 to determine

if the Swainson's hawk are present and nesting. If so, consultation will be initiated with the California Department of Fish and Game (CDFG).

Cooper's hawk

Cooper's hawk (*Accipiter cooperii*) nest in deciduous trees or conifers in crotches or cavities that are usually 20 to 50 feet off the ground. The nest is a stick platform lined with bark. Nests are usually placed in second growth coniferous stands or in the deciduous riparian areas that are closest to streams.

Cooper's hawk are recorded as occurring in several locations along the American River and the riparian habitat in the vicinity of the project area provides suitable nesting habitat for this species. The closest record of nesting Cooper's hawk in CNDDB is located upstream of the project area along the American River at Goethe Park. Although no nest were located with in the project area, during the raptor surveys a Cooper's hawk was seen flying across the project location.

Central Valley steelhead

Central Valley steelhead (*Oncorhynchus mykiss*) and its critical habitat occur along the lower American River, including the project reach. It is estimated that the project is no closer than 100 feet from the river.

3.4.3 Environmental Effects

Basis of Significance

Adverse effects on special status species were considered significant if an alternative would result in any of the following:

- Direct or indirect reduction in the growth, survival, or reproductive success of species listed or proposed for listing as threatened or endangered under the Federal or State Endangered Species Acts.

- Direct mortality, long-term habitat loss, or lowered reproduction success of Federally or State-listed threatened or endangered animal or plant species or candidates for Federal listing.

- Direct or indirect reduction in the growth, survival, or reproductive success of substantial populations of Federal species of concern, State-listed endangered or threatened species, or species of special concern or regionally important commercial or game species.

- Have an adverse effect on a species' designated critical habitat.

No-Action Alternative

Under the no action alternative, there would be no effects on existing special status species or critical habitat. The types of special status species and their associated habitat would remain the same. Current levee maintenance, recreation, and public activity would not change. The effects of these activities on special status species and their associated habitat would be the same.

Construct Levee Improvements

Construction of the Howe Avenue levee improvements would directly and indirectly affect the habitat (elderberry shrubs) of the federally-listed Valley elderberry longhorn beetle. The project could also result in direct and indirect affects to white-tailed kite, Swainson's hawk, and Cooper's hawk. These effects could be considered significant to these special status species unless mitigated.

Effects to Valley Elderberry Longhorn Beetle. Construction of the Howe Avenue levee improvements would result in indirect affects to several elderberry shrubs. Indirect effects would include physical vibration and increase in dust during operation of equipment and trucks during construction activities.

The levee repair work will require an excavator operate from the waterside toe of the levee in order to temporarily remove soil to key-in the imported soil. The excavator will also be used, along with small tracked equipment to rebuild the levee crown and waterside slope. Staff from FWS and the Corps conducted elderberry surveys on March 30th, 31st and April 20th, 2009, and June 7, 2011. The reach has a total of 36 elderberry shrubs. The shrubs are all located at the downstream end of the reach in and around the staging area. The shrubs will not be directly impacted by the construction work, but to avoid damage to the shrubs, they will be protected in place with concrete barriers. The barriers will protect the shrubs from damage by the equipment, as well as from soil that may slide down the stockpiles. The barriers will be placed as far from the dripline of the shrubs as possible. Due to the limited options for locating the staging area, as well as the limited space within the staging area, it would be difficult to observe the required a 100-foot radius buffer zone for protection of the elderberry shrubs. The Corps is proposing a 20-foot radius buffer zone, using concrete barriers for protection, and limiting construction until after the no-disturbance period (after June 15).

3.4.4 Mitigation

Valley Elderberry Longhorn Beetle

Formal consultation under Section 7 of the Endangered Species Act was initiated with the USFWS to assess potential impacts and required compensation. To minimize potential take of the valley elderberry longhorn beetle, the following measures

taken from the USFWS "Conservation Guidelines for the Valley Elderberry Longhorn Beetle," July 1999 would be incorporated into the project:

- A minimum setback of 100 feet from the dripline of all elderberry shrubs will be established, if possible. If the100 foot minimum buffer zone is not possible, the next maximum distance allowable will be established. Due to the limited options for locating the staging area, as well as the limited space within the staging area, it would be difficult to observe the required 100-foot radius buffer zone for protection of the elderberry shrubs. The Corps is proposing a 20-foot radius buffer zone, using concrete barriers for protection, and limiting construction until after the no-disturbance period (after June 15). These areas would be fenced, flagged and maintained during construction.

- Environmental awareness training would be conducted for all workers before they begin work. The training would include status, the need to avoid adversely affecting the elderberry shrub, avoidance areas and measures taken by the workers during construction, and contact information.

- Signs would be placed every 50 feet along the edge of the elderberry buffer zones. The signs would include: "This area is the 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." The signs should be readable from a distance of 20 feet and would be maintained during construction.

- All placement of barriers to protect elderberry shrubs adjacent to the construction areas shall be completed prior to construction activity.

Several factors limit the available construction season for Corps projects related to levee repair or improvements. The two most common are the non-flood season establishes by the State of California (April 15th – October 31st) and the seasonal requirements of sensitive species that may occur in the project area. In this case, the presence of VELB habitat has reduced the construction season by two months by limiting the construction start date to no earlier than June 15th due to protective measures.

Formal consultation has been completed with USFWS (Appendix A). An amended Biological Opinion (BO) was issued on July 9, 2009, and was further amended on June 30, 2011, due to the delay in schedule. The protective measures listed above are also those listed in the BO. The implementation of these protective measures will reduce impacts to the VELB and its' habitat to a level less than significant.

Swainson's hawk, White-tailed kite, Cooper's hawk

Whenever possible, construction would be timed to avoid activities near active bird nests or young of birds that breed in the area. The nesting seasons associated with the potential presence of raptors and protected avian species could further reduce the

available construction season into September. For this reason, it would be unrealistic to propose no construction would take place during the breeding/ nesting seasons of these avian species during the available construction season (June15th – October 1st).

The Corps will however, take steps to avoid and minimize impacts to raptors and other protected avian species. If it is not feasible for construction to occur outside nesting periods (April-September 15th), a qualified biologist would survey the project area and all areas within one-half mile of the project prior to initiation of construction. If the survey determines that a nesting pair is present, the Corps would coordinate with the State Department of Fish and Game, and the proper avoidance and minimization measures would be implemented. To avoid potential effects to nesting Swainson's hawks, the California Department of Fish and Game typically requires the avoidance of nesting sites during construction activities. These measures include avoiding construction during the breeding season and monitoring of the nest site by a qualified biologist. The project is currently scheduled to begin in late August to mid-September of 2009. It is anticipated that the timing of the project would begin after the young Swainson's hawks and white-tailed hawks have fledged.

Only a handful of trees will require minor trimming along the waterside toe. Two cottonwood trees at University Park will be removed, but no nests were located in those trees, therefore no nests will be destroyed.

The proposed mitigation measures would reduce the effects on the Swainson's hawk, white-tailed kite and Cooper's hawk to less than significant.

3.5 Air Quality

3.5.1 Existing Conditions

Regulatory Background. The Federal Clean Air Act establishes National Ambient Air Quality Standards (AAQS) and delegates enforcement to the states, with direct oversight by the U.S. Environmental Protection Agency (EPA). In California, the Air Resources Board (CARB) is the responsible agency for air quality regulation.

The California Clean Air Act established California AAQS. These standards are more stringent than Federal standards and include pollutants not listed in Federal standards. All Federal projects in California must comply with the stricter State air quality standards. The Federal standards and local thresholds for Sacramento County are shown in Table 1.

Table 1. Air Emission Thresholds for Federal and Local Criteria Pollutants

Criteria Pollutant	Federal Standard (tons/year)	SMAQMD Threshold (lbs/day)
NO_x	50	85
CO	100	*
SO	100	*
PM_{10}	100	*
ROG	50	*

NO_x = nitrogen oxides PM_{10} = particulate matter
CO = carbon monoxide ROG = reactive organic gases
SO = sulfur oxides
* = default to State standard
SMAQMD = Sacramento Metropolitan Air Quality Management District
Source: www.airquality.org/ceqa/index.shtml, 2005

On November 3, 1993, the U.S. EPA issued the General Conformity Rule, stating Federal actions must not cause or contribute to any violation of a National AAQS or delay timely attainment of air quality standards for those areas designated as in nonattainment of federal standards. A conformity determination is required for each pollutant where the total of direct and indirect emissions caused by a Federal action in a nonattainment area exceeds *de minimus* threshold levels listed in the rule (40 CFR 93.153).

Local Air Quality Management

The Sacramento area is included in the Sacramento Valley Air Basin. The air quality in the area is managed by the Sacramento Metropolitan Air Quality Management District (SMAQMD), which is included in the Sacramento Federal Ozone Nonattainment Area (SFNA) and is also subject to regulations, attainment goals, and standards of the U.S. and California EPA's.

With two exceptions, the SFNA is in attainment for all National and State AAQS. However, the area is designated a "serious" nonattainment area for the National 8-hour AAQS for ozone and is a "serious" nonattainment area for the State's 1-hour ozone standard. As a part of the SFNA, Sacramento County is out of compliance with the State and Federal ozone standards.

With respect to the State and Federal 24-hour particulate matter 10 microns or larger (PM_{10}) AAQS, Sacramento County is designated as a nonattainment area. Additionally, in June 2004, the U.S. EPA proposed to classify Sacramento County in attainment of the new Federal $PM_{2.5}$ standard (SMAQMD, 2004). On October 16, 2006, the standard for PM2.5 was lowered from 65µg/m3 to the daily standard of 35µg/m3, which Sacramento does not meet. In October, 2007, the Air District completed its boundary analysis and in December 2007, the California Air Resources Board made their recommendations on a nonattainment area boundary to the USEPA. The California Clean

Air Act of 1988 requires nonattainment areas to achieve and maintain the State ambient air quality standards by the earliest practicable date and local air districts to develop plans for attaining State ozone standards.

Sources of Pollutants/Sensitive Receptors

The main sources of emissions contributing to elevated ozone and PM_{10} concentrations in this area of the Sacramento Air Basin are vehicular emissions and airborne pollutants from road dust and plowing of fields. Light industry and emissions from recreational boaters and Sacramento Executive Airport also contribute to reduced air quality in the region. Sensitive receptors in the project area include residents and wildlife.

3.5.2 Environmental Effects

Basis of Significance

A project would significantly affect air quality if it would: (1) violate any ambient air quality standard, (2) contribute a long-term basis to existing or projected air quality violation, (3) expose sensitive receptors to substantial pollutant concentrations, or (4) not conform to applicable Federal and State standards, and local thresholds on a long-term basis.

No Action

Under the no action alternative, the project would not affect air quality in the project area. Air quality would continue to be influenced by climatic and geographic conditions, and local and regional emissions from vehicles, and local commercial and industrial land uses. However, air quality is expected to improve in the future. The CARB and the SMAQMD will be implementing stricter ozone precursor and PM_{10} standards.

Construction of Levee Improvements

Emissions associated with the project would be short-term during construction. Combustion emissions would result from the use of construction equipment, truck haul trips to and from commercial sources and disposal sites, and worker vehicle trips to and from the work areas. Exhaust from these sources would contain reactive organic gases (ROG), carbon monoxide (CO), nitrogen oxides (NO_x), PM_{10} and carbon dioxide (CO_2). Exhaust emissions would vary depending on the type of equipment, the duration of use, and the number of construction workers and haul trips to and from the construction site. Fugitive dust would also be generated during disturbance of the ground surfaces during construction.

The SMAQMD Road Construction Emissions Model (v. 6.3.1) was used to estimate project emission rates for ROG, CO, NOx, sulfur dioxides, PM_{10} and CO_2. The

estimated equipment to be used, volume of material to be moved, and disturbance acreages were compiled to determine the data to input into the emissions model. The emission calculations are based on standard vehicle emission rates built into the model.

Details and results of the calculations for each reach are provided in Appendix B. The estimated combined emissions are shown in Table 2.

Table 2. Estimated Air Emissions

	ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Site Preparation & Construction						
Total emissions (lbs/day)	11.6	108.6	109.4	20.2	5.7	12,386.30
SMAQMD thresholds (lbs/day)	N/A	85	N/A	N/A	N/A	N/A
Total (tons/construction project)	0.1	1.2	1.2	0.2	0	137.2
Total (tons/year)	2.1	19.8	20.0	3.7	1.0	2260.5
Federal standards (tons/year)	50	50	100	100	N/A	N/A

ROG = reactive organic gases
NOx = nitrogen oxides
CO = carbon monoxide
PM_{10} = particulate matter
SOx = sulfur oxides
CO_2 = carbon dioxide
Note: Estimates rounded.

Table 2 summarizes the combined estimated emissions (in pounds per day, total tons for the project and total tons per year) for the project and compares them to the Federal standards and local thresholds. The results show the combined NOx emissions would exceed the SMAQMD threshold of 85 pounds per day.

The table also shows that construction emissions of PM_{10} and ROG would each be less than the *de minimis* thresholds established by the U.S. EPA for conformity analyses. In addition, the best management practices listed in Section 3.5.4 would be implemented to reduce the NOx emissions below the Federal standard. As a result, the proposed action does not require an in-depth conformity analysis to evaluate ambient air quality concentrations and instead is presumed to conform to the region's ozone and PM_{10} State implementation plan. Therefore, the Corps has determined the proposed action is exempt from the conformity rule.

3.5.3 Global Warming and Climate Change.

Within the discussion of concerns related to global warming, carbon dioxide (CO_2) is now being tracked as one of the contributors to greenhouse gas emissions. For projects that occur in, and around, the Sacramento Valley area, SMAQMD has emissions models that will calculate several air emissions based on various input criteria (construction phase, duration, type of equipment, project area, etc.). Due to the linear nature of many of the levee repair projects being undertaken by the Corps, SMAQMD has suggested the use of their Road Construction Emissions Model. The outputs of these models address criteria pollutants associated with the National Ambient Air Quality Standards (NAAQS) as well as those associated with California AAQS, which are considered to be more stringent than the Federal standards.

In response to the concerns regarding greenhouse gas emissions, the most recent version of the SMAQMD Road Construction Emissions Model (v. 6.3.1) now generates an output for CO_2. The results from the emissions model in Table 2 include CO_2. It should be noted that although CO_2 emissions can now be calculated, there is no Federal standard, or any State or local threshold, to meet, which makes it difficult to fully analyze under NEPA and CEQA. Also, as the focus on CO_2 emissions is relatively recent, specific mitigation measures, as they relate to construction, are not fully developed. For these reasons, the Best Management Practices (BMPs) and Mitigation Measures listed in Section 3.6.4 will also be employed to minimize CO_2/greenhouse gas emissions.

The project will improve flood protection along the American River by meeting current requirements to safely convey an emergency release of 160,000 cfs with 3 feet of freeboard. The current design requirements will bring equity to the levee system within the lower American River and are based on recent data and trends. More current data regarding the changes in seasonal weather patterns my ultimately determine that the current design requirements may no longer be adequate. The Corps will evaluate these trends in consideration for reducing the flood risk in this region.

3.5.4 Mitigation

Emissions would result from the use of construction equipment, truck haul trips to and from the borrow sites, and worker vehicle trips to and from the construction sites. Prior to construction, the contractor would submit a construction equipment list to be used in the project for approval by USACE and SMAQMD. SMAQMD would confirm the fleet emissions and endorse the list only if the total fleet emissions would meet a 20% reduction in NOx and a 45% reduction in PM_{10} in comparison to the state fleet emissions average. The contractor will be required to follow the requirements of SMAQMD's standard mitigation program (Appendix B). Any remaining emissions over the NOx threshold should be reduced via a mitigation fee payment. The projected (2012) cost of reducing one ton of NOx is $16,640 ($8.32/lb). The contractor will be responsible for payment of any required mitigation and administrative fees.

The emissions of unmitigated NOx, primarily from off-road construction equipment, would be above the significant threshold for construction; therefore, additional mitigation would need to be applied. The standard mitigation measures for the SMAQMD Recommended Mitigation for Reducing Emissions from Heavy-Duty Construction Vehicles are:

- Use diesel-fueled equipment manufactured in 2003 or later, or retrofit equipment manufactured prior to 2003 with diesel oxidation catalysts.

- Maintain properly functioning emission control devices on all vehicles and equipment.

- The contractor would provide a plan, for approval by the Corps and SMAQMD, demonstrating that the heavy-duty (> 50 horsepower) self-propelled off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction; and

- The contractor shall submit to the Corps and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

- The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and [DERA, City of x, SMAQMD, etc.] shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other SMAQMD or state rules or regulations.

- If at the time of construction, the SMAQMD has adopted a regulation applicable to construction emissions, compliance with the regulation may completely or partially replace this mitigation. Consultation with SMAQMD prior to construction will be necessary to make this determination.

Implementation of the BMPs listed below would reduce air quality degradation caused by dust and other contaminants:

- During construction, implement all appropriate dust control measures, such as tarps or covers on dirt piles, in a timely and effective manner.

- Periodically water all construction areas having vehicle traffic, including unpaved areas, to reduce generation of dust. Application of water would not be excessive or result in runoff into storm drains.

- Suspend all grading, earth moving, or excavation activities when winds exceed 20 miles per hour.

- Water or cover all material transported offsite to prevent generation of dust.

- Sweep paved streets adjacent to construction sites, as necessary, at the end of each day to remove excessive accumulations of soil or dust.

- Cover all trucks hauling dirt, sand, soil, or other loose material, or maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision would be enforced by local law enforcement agencies.

- Re-vegetate or pave areas cleared by construction in a timely manner to control fugitive dust.

Any affects to air quality would be temporary, and mitigation measures would reduce impacts to less than significant.

3.6 Water Resources and Quality

3.6.1 Existing Conditions

The Sacramento metropolitan area is situated at the confluence of the American and Sacramento River in a low-lying flood basin. Levees along these rivers provide flood protection and convey water from the Sierra Nevada to the Sacramento-San Joaquin Delta. Winter rains and spring snow melt can cause high flows in the valley rivers. High water flows stresses levees and berms, weakening them, causing them to erode, and possibly fail. To maintain the flood control system, areas with existing or potential erosion and seepage damage are identified and repaired.

The American River is the major waterway in the project area. The river flow is influenced by upstream dams, local weather, spring snow melt, flood by-passes, and upstream tributaries. Folsom Dam has the greatest effect on water flow in this section of the river. The mean water level for the American River at the confluence of the

Sacramento River was 20.44 feet in 2007. The maximum water level of the American River was 33.54 feet and the minimal water level was 16.75 feet at the confluence in 2007 (DWR 2007).

American River water quality is affected by storm water runoff, water diversion, and surrounding land uses. The water quality tends to degrade as the river leaves the Sierra Mountains and flow through the Central Valley into the Sacramento-San Joaquin Delta. Water quality studies by U.S. Geological Survey determined that urban runoff from the metropolitan area of Sacramento is a potential source of contaminants that enter the lower Sacramento River. Contamination by volatile organic compounds, especially contamination of ground water, can occur in any large urban setting. (Domagalski, Joseph 2007).

The local rivers, lakes, and rainfall recharge the ground water table in the project area. The City of Sacramento utilizes the ground water to supply drinking water to businesses and residential homes. The ground water table is approximately 75 feet below the surface. Average ground water depth can be affected by seasonal changes in water volume in the valley, rivers, and lakes, local rainfall, and urban demand on the ground water (DWR 2005).

The ground water quality is affected by chemicals that seep into the ground by surrounding land uses. Ground water testing resulted in low concentrations of eight volatile organic compounds, four pesticides, and one pesticide transformation product. The ground water table had high concentrations of nitrates and nitrogen. Arsenic concentrations exceed the EPA maximum concentration level of 10 milligrams per liter. Manganese, iron, chloride, total dissolved solids, and specific conductance exceeded the California Department of Health Services recommended secondary maximum contaminant levels (Shelton, Jennifer L. 2005).

3.6.2 Environmental Effects

Basis of Significance

A project would significantly affect water resources if it would: (1) result in the loss of a surface or groundwater source, or (2) interfere with existing beneficial uses or water rights.

No Action

Under this alternative, there would be no construction activity to affect water resources or quality in the project area. The surface and groundwater conditions would not change.

Construct Levee Improvements

Levee construction would occur within the levee alignment and waterside levee slope. The closest the American River gets to the construction limit is approximately 100 feet. The completed levee improvements would not significantly alter the alignment of the current levee nor would they provide for any additional flow capacity beyond the current design requirements. The improvements will stabilize the levees in this section of the levee system to safely convey an emergency release of 160,000 cfs with 3 feet of freeboard to allow for wave or wind action. The improvements will not alter the river hydraulics nor would they alter the downstream capacity of the levee system. The downstream sections of the levee system on the American River are already capable of safely conveying an emergency release of 160,000 cfs with 3 feet of freeboard.

Approximately 10 acres of bare soil would be exposed until construction is completed and the levee slope and staging area will be reseeded. Dust control measures would be implemented on the levee crown, side slopes, maintenance roads and stockpiles to avoid dust and soil from entering the river or other drainages as a result of construction activities. Precautions would be followed to avoid erosion and movement of soils into the drainage system.

In addition, inadvertent spills of oil or fuels from construction equipment could be a source of contamination at work or staging areas. Precautions would be followed to avoid contamination. The contractor would be required to properly store and dispose of any hazardous waste generated at the site. Riparian vegetation and best management practices would prevent sediment and erosion runoff from entering the river.

3.6.3 Mitigation

Since the project would disturb more than 1 acre of land, the contractor would be required to obtain a National Pollution Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board (RWQCB), Central Valley Region. As part of the permit, the contractor would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP), identifying best management practices to be used to avoid or minimize any adverse effects during construction to surface waters.

- The following best management practices would be incorporated into the project:

- The contractor would prepare a spill control plan and a SWPPP prior to initiation of construction. The SWPPP would be developed in accordance with guidance from the RWQCB, Central Valley Region. These plans would be reviewed and approved by the USACE before construction began.

- Implement appropriate measures to prevent debris, soil, rock, or other material from entering the water. Use a water truck or other appropriate measures to control dust on haul roads, construction areas, and stockpiles.

- Properly dispose of oil or other liquids.

- Fuel and maintain vehicle in a specified area is designed to capture spills. This area can not be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water.

- Inspect and maintain vehicles and equipment to prevent dripping of oil or other liquids.

- Schedule construction to avoid the rainy season as much as possible. Ground disturbance activities is scheduled to begin late 2009 or summer 2010. If rains are forecasted during construction, erosion control measures would be implemented as described in the RWQCB Erosion and Sediment Control Field Manual.

- Maintain sediment and erosion control measures during construction. Inspect the control measures before, during, and after a rain event.

- Train construction workers in stormwater pollution prevention practices.

- Re-vegetate disturbed areas in a timely manner to control erosion.

Since no significant adverse affects to groundwater or surface water resources are anticipated, no additional mitigation is required.

3.7 Traffic and Circulation

3.7.1 Existing Conditions

Streets in the project area consist primarily of minor residential streets maintained by Sacramento County. City sidewalks are located on each side of the residential streets, which are used by local residents. The American River Parkway provides recreation trails used for pedestrian traffic (running and walking), horseback riding and bicycling are located throughout the project area.

Roadways parallel to the reach include: Breckenwood Way, Kadema Drive and University Avenue. These roadways are two-lane residential roadways on the landside of the levee The smaller residential roads connect neighborhoods to major urban connector roads. Traffic on the residential streets includes private automobiles and bicycles. Traffic on the residential roads tends to be light through out the day with a peak during the morning and evening rush hour.

The nearest major road to the project area is Howe Avenue. This roadway is a major, four-lane urban roadway that connects local residential and commercial areas to state highways and other parts of the metropolitan area. American River Drive is outside of the project area but would be used to access the project area during construction.

Types of traffic on Howe Avenue include private automobiles, light commercial vehicles, emergency vehicles, public buses, and bicycles. Traffic volume on Howe Avenue peaks during the morning and evening rush hour and becomes a steady but lower volume during the day.

Pedestrian traffic is low during the day and peaks in the early evening. Recreation traffic in the American River Parkway and levee bicycle trail is the highest in the early evening till dusk. The American River Parkway trail is a paved two-lane bike trail. The levee trail is a gravel road on top of the levee.

Sacramento County posts traffic counts on their web site for roadways in the project area. Traffic count at American River Drive west of Watt Avenue is 11,076 cars per year, and 16,118 cars per year on University Avenue. (Sacramento County 2007).

3.7.2 Environmental Effects

Basis of Significance

The project would have a significant affect on traffic if it would: (1) cause an increase in traffic volume that is substantial in relation to the existing load and capacity of a roadway, (2) cause an increase in safety hazards on an area roadway, or (3) cause substantial deterioration of the physical condition of the nearby roadways.

No Action Alternative

The no action alternative would have no effect on the traffic and circulation in the project area. The existing roadways, bike paths, types of traffic, traffic volume, and circulation patterns would not change.

Construct Levee Improvements

The project would temporarily affect local residential roads and major urban connector roads used as a haul route during construction. Haul trucks would cause an increase in traffic volume and reduce traffic speeds on local residential roads. Haul trucks would have a minor affect on traffic volume and traffic speeds on the major urban connector roads.

The directional flow of construction is from the upstream end of the reach at the Kadema Access Point to the downstream end at the Howe Avenue overpass. During construction, the haul trucks will travel between the commercial borrow pit and the construction site. For the purposes of this discussion the following scenario will be used to describe the haul routes and traffic impacts: Haul trucks would use Watt Avenue, American River Drive, and Kadema Drive, using the access point at Kadema Drive to enter the levee. After offloading the material, the haul trucks would use an access ramp adjacent to Howe Avenue to exit on University Avenue then on to American River Drive which connects to Watt Avenue to access Highway 50 to leave the project area. A

flagman at the levee end of the ramp at University Avenue would direct construction traffic as the haul trucks leave the construction site. During the height of construction it is estimated that approximately 30 haul trucks will be accessing the site per day.

Access to the Jedediah Smith Recreation Trail at the formal and informal pedestrian trails along the project reach would be closed during construction. Bicyclists also use the American River Parkway for commuting and other purposes. The paved access ramps at Kadema and University Park will be closed for safety reasons. There are several areas between the Kadema access point and Howe Avenue in which the bike trail boundaries are adjacent to the project footprint. In order to limit the effects on the bike trail and allow the trail to remain open, concrete barriers and/or fencing would be temporarily installed adjacent to the edge of the bike trail. These barriers will be set back as far as possible from the bike trail to avoid potential collusions. Signage and/or flaggers will also be provided to warn users of the construction activities. These measures will protect the bike trail and it's users from the construction activities.

However, this will require closing off the waterside toe maintenance road to pedestrian use due to equipment and truck traffic. Although this is not a formal feature of the Jedediah Smith Recreational Trail, it gets frequent use by pedestrians who walk to avoid the traffic on the bicycle trail.

The closure of the waterside maintenance road will be necessary for safety reasons. Pedestrians will be encouraged, through the use of concrete barriers and/or fencing, to use the shoulder of the bicycle trail in this section during the construction period.

3.7.3 Mitigation

The contractor would be required to develop a Traffic Control Plan, which would be reviewed and approved by Sacramento City prior to construction. This plan would include the following measures:

- Do not permit construction vehicles to block any roadways or private driveways.
- Provide access for emergency vehicles at all times.
- Select haul routes to avoid schools, parks, and high pedestrian use areas, when possible. Crossing guards would be used when truck trips coincide with schools hours and when haul routes cross student travel path.
- Obey all speed limits, traffic laws, and transportation regulations during construction.
- Use signs and flagmen, as needed, to alert motorists, bicyclists, and pedestrians to avoid conflict with construction vehicles or equipment.

- Flagmen would be used at each roadway that crosses the levee to safely circulate traffic through the construction site.

- Use separate entrances and exits to the construction site.

- Prior to construction, notify local residents, business, schools, and the City of Sacramento if road closures would occur during construction.

- Contractor would repair roads damaged by construction.

The proposed mitigation measures would reduce the effects on traffic and circulation to less than significant.

3.8 Public Utilities and Services

3.8.1 Existing Conditions

Public services in or near the project area includes street cleaning, trash pickup, potable water supply, electricity, natural gas supply, storm water discharge, and sanitary sewage. These public services are implemented by local utilities and Sacramento City. Public utility facilities, pipelines, and conduits in the project area includes: electric power distribution towers and a pump station.

3.8.2 Environmental Effects

Basis of Significance

A project would significantly affect public utilities and services if it would: (1) disrupt or significantly diminish the quality of the public utilities and services for an extended period of time, or (2) damage public utility and service facilities, pipelines, conduits, or power lines.

No Action

Under the no action alternative there would be no effects on public utilities and services in the project area. There would be no change in type, quality, or availability of services in the project area.

Construct Levee Improvements

No utilities or public services would be interrupted during construction. Construction would not access or realign existing potable water supple, sanitary sewerage, or storm sewer system. All utilities located adjacent to, or passing through, the project levee will be protected in place. Natural gas supply or electrical transmission lines would not be augmented except to provide temporary electrical power to the

contractor's construction trailer, if necessary. Employee vehicles would park in project staging areas to avoid interrupting public services.

3.8.3 Mitigation

Prior to initiating ground disturbing activities, the contractor will coordinate with Underground Service Alert (USA) to insure all underground utilities are identified and marked. Since no significant adverse affects to public utilities and services are anticipated, no mitigation is required.

3.9 Noise and Vibration

3.9.1 Existing Conditions

Noise is defined as unwanted sound that evokes a subjective reaction to the physical characteristics of a physical phenomenon. Ambient noise in the project area is generated by the traffic on the adjacent surface streets. Other noise may be generated primarily in the summer by motorized recreation on the American River. Based on experience with similar settings, it is assumed existing noise levels in the project area are in the range of 60 to 70 decibels (dB) day-night sound level (Ldn). Noise-sensitive receptors in the project area include residents, recreational users, and wildlife.

The project area is in a relatively quiet area with single family residential homes. Currently the main source of noise includes motor vehicles, human activity, and natural sounds. Construction noise related to commercial or residential activity varies with the type of equipment and length of activity.

Construction activities associated with the project may result in some minor amount of ground vibration. Vibration from construction activity is typically below the threshold perception when the activity is more than about 50 feet from the receptor. The closest residences to the construction activities will be 70 feet away, or greater. Due to the transitional nature of the construction activities, exposure at any one location will be intermittent. The most common activity throughout each reach will result from truck traffic. Additionally, vibration from these activities would be short term and would end when construction is completed. The construction activities would not involve high-effect activities like pile driving.

Since the reach lies within the city of Sacramento, the City's noise policies and regulations apply to the project. The City has established policies and regulations concerning the generation and control of noise that could adversely affect their citizens and noise-sensitive land uses. The General Plan is a document required by state law that serves as the city's "blueprint" for land use and development. The General Plan provides an overall framework for development in the City and protection of its natural and cultural resources. The Noise Element of the General Plan contains planning guidelines relating to noise.

In addition, the Sacramento Municipal Code, Title 8 (Health and Safety) establishes the enforcement mechanism for controlling noise in the City. Specifically, the Noise Ordinance in the Municipal Code is described under Chapter 8.68 (Noise Control), Article II (Noise Standards). Section 8.68.060 sets the standards, Section 8.68.060B discusses the length of exposure, and Section 8.68.080 details the exemption, including the exemption for construction.

The City's Noise Ordinance establishes 60 A-weighted decibels (dBA) Ldn as the maximum acceptable exterior noise level for schools and single and multi-family residential areas. The City's Noise Ordinance also states any exterior noise limits must not exceed 50 dBA between 10:00 p.m. and 7:00 a.m. and 55 dBA between 7:00 a.m. and 10:00 p.m. for residential and agricultural areas. However, Section 8.68.080 of the Sacramento Municipal Code exempts construction activities between the hours of 7:00 a.m. and 6:00 p.m., Monday through Saturday, and 9:00 a.m. and 6:00 p.m. on Sunday. The ordinance further states internal combustion engines in use on construction sites must be equipped with "suitable exhaust and intake silencers which are in good working order."

The County of Sacramento General Plan Noise Element (1993) has established noise standards for various land use categories. These standards are broken out into Acceptable, Conditionally Acceptable and Unacceptable noise exposure ranges based on A-weighted decibel (dBA) Ldn, measurements. The project reach would most likely fall into the land use category of Agricultural/Residential 5 to 10 acres. The noise standards for this land use category are: Acceptable – up to 60; Conditionally Acceptable – 65 to 75; Unacceptable – above 75.

The project area is located adjacent to the boundary with Sacramento County. The County of Sacramento General Plan Noise Element (1993) has established noise standards for various land use categories. These standards are broken out into Acceptable, Conditionally Acceptable and Unacceptable noise exposure ranges based on A-weighted decibel (dBA) Ldn measurements.

Although construction equipment may cause noticeable increase in ambient noise levels near individual levee construction and staging areas any noise increases would be short term and intermittent. Construction noise would fluctuate, depending on construction phase, equipment type and duration of use, distance between noise source and receptor, and presence or absence of barriers between noise source and receptor. Noise from construction activity generally attenuates at six to none dBA per doubling of distance. Assuming an attenuation rate of six dBA per doubling of distance, construction equipment noise in the range of 80 to 90 dBA at 50 feet would generate noise levels of 74 to 84 dBA at 100 feet from the source. The residences in this project area are located approximately 50 feet from the construction area. Using the same attenuation rate of 6dBA per doubling of distance, the noise levels would not drop substantially based on the distance from the source. Most every property has trees or shrubbery planted at the rear of their property which adjoins the landside boundary of the project area. This vegetation should provide for some attenuation of the noise.

3.9.2 Environmental Effects

Basis of Significance

Adverse effects on noise are considered significant if an alternative would result in any of the following:

- Exposure of persons or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Substantial short-term or periodic increase in ambient noise levels in the project vicinity above existing levels existing without the project.
- Substantial long-term increase in ambient noise levels in the project vicinity above levels existing without the project.
- Vibration exceeding 0.2 inch per second within 75 feet of existing buildings.

The significance criteria for changes in noise from project operations are listed below. These criteria are based on the County of Sacramento Noise Ordinance.

- A 3-dBA increase in noise if the existing noise level already exceeds the "normally acceptable range" for the land use (60 dBA or less for residential uses).
- A 5-dBA increase in noise if the existing noise level is in the "normally acceptable range" and the resulting level is within the "normally acceptable range" for the land use.
- A resulting offsite exterior noise level that exceeds 55 dBA for a cumulative duration of 30 minutes in an hour (L50) during the daytime (7:00 a.m. to 10:00 p.m.) or 50 dBA L50 during the nighttime (10:00 pm to 7:00 a.m.).

No-Action Alternative

Under the no action alternative, there would be no effects on noise. Sources of noise and noise levels would continue to be determined by local activities, development, and natural sounds.

Construct Levee Improvements

Construction activity noise levels at and near the construction areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. In addition, certain types of construction equipment generate impulsive noises (such as pile driving), which can be particularly annoying. Pile driving, however, is not proposed for project development. Table 3 shows typical noise levels during different construction stages. Table 4 shows typical noise levels produced by various types of construction equipment.

Table 3. Typical Construction Noise Levels

Construction Phase	Noise Level (dBA, Leq)[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

[a] Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Source: U.S. Environmental Protection Agency, 1971.

Table 4. Typical Noise Levels From Construction Equipment

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Pile Driver	101
Backhoe	85

Source: Cunniff, Environmental Noise Pollution, 1977.

Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling of the distance from the reference noise source. Based on the project site layout and terrain, an attenuation of 6 dBA will be assumed. Residences are located adjacent to the project area, the nearest having approximately 50 feet between their backyard and excavation areas. This residence would experience noise levels at about 86 dBA during excavation, the loudest of construction activities that would occur. Other residences located around the project area are further away and thus would receive lower levels of noise. During the height of construction, the haul route is expected to have 30 round trips per day. A receptor at 50 feet from a dump truck would experience noise levels up to approximately 88 dBA during a pass by.

Construction noise at these levels would be substantially greater than existing noise levels at nearby sensitive receptor locations. Construction activities associated with the project would be temporary in nature and related noise impacts would be short-term. However, since construction activities could substantially increase ambient noise levels at noise-sensitive locations, especially if they were to occur during the nighttime hours, noise from construction would be potentially significant without mitigation.

Construction activities would result in short-term increases in ambient noise. Sensitive receptors that could be affected by this increase include residents, wildlife,

recreationists and students. Construction of the project would occur between the hours of 7:00 a.m. and 4:00 p.m., Monday through Saturday. The noise associated with the construction activities would typically fall within the County of Sacramento's conditionally acceptable noise exposure category at the point of sensitive receptors. The construction activities are designed to be conducted in 500 foot segments within the reach and each segment is estimated to take no longer than a week. Because construction would be short-term, and construction activities would be limited to these times, this effect would be less than significant.

3.9.3 Mitigation

Implementation of the following measures would reduce noise-related impact to less than significant:

- In accordance with the City Noise Ordinance exemptions for construction (City of Sacramento Noise Ordinance Section 8.68.080) the construction activities shall be limited to between 7:00 a.m. and 6:00 p.m. Monday through Saturday and 9:00 a.m. and 6:00 p.m. on Sundays.
- Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.
- Turn off all equipment, haul trucks, and worker vehicles when not in use for more than 30 minutes.
- Notify residences about the type and schedule of construction.

Compliance with the local noise ordinance would minimize the exposure of residents to excessive noise. Construction is scheduled to be completed within 2-3 months. Therefore, the impact after mitigation is less than significant.

3.10 Esthetics/Visual Resources

3.10.1 Existing Conditions

The lower American River is a component of the National Wild and Scenic Rivers System. Section 7 of the Wild and Scenic Rivers Act prohibits Federal agencies from "assist[ing] by loan grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established." The lower American River is designated under this act for its recreational values pertaining to fishing and parkway activities.

It is National policy that esthetic resources be protected along with other natural resources. Esthetic resources are those natural resources, landforms, vegetation, and manmade structures in the environment that generate one or more sensory reactions and evaluations by the observer, particularly in regard to pleasurable response. These sensory reactions are traditionally categorized as pertaining to sight, sound, and smell. Esthetic quality is the significance given to esthetic resources based on the intrinsic physical

attributes of those specific features and recognized by public, technical, and institutional sources. The identification of scenic resources in the landscape requires a process that identifies the relevant visual features and that is derived from established Federal procedures. Visual quality is influenced by many landscape features including geologic, hydrologic, botanical, wildlife, recreational, and urban characteristics.

The area along this stretch of the American River has a moderate esthetic value. The American River is located between 150 and 500 feet from the project reaches and provides valuable riparian habitat as well as recreational opportunities. Nearer to the project area the esthetic components include residential development, the project levee, American River Parkway access points, the Jedediah Smith Recreation Trail (bike trail) and small local parks. These components intermix with the parkway at its fringes which also tempers the esthetic value in these areas.

3.10.2 Environmental Effects

Basis of Significance

An alternative would be considered to have a significant effect on esthetics if changes in landform, vegetation, or structural features create substantially increased levels of visual contrast as compared to surrounding conditions.

No Action Alternative

Under the no action alternative, there would be no effect on esthetics. The views and esthetic quality of both reaches would remain the same.

Construct Levee Improvements

Construction of the levee raise and widening would temporarily affect the esthetics in the project area. Short-term effects would include the presence and activities of construction equipment and workers in the project area.

Short-term activities would include preparing the site, removing vegetation on the waterside slope of the levee, degrading the top of the levee and the staging area, and constructing the levee raise.

After completion of construction the site would be landscaped consistent with the preconstruction conditions. Although the levee would be permanently higher, the overall raise would be minimal (approximately 1 foot) and the viewshed would not be altered. The reconstructed levee would remain consistent with the preconstruction visual resources of the project area.

3.10.3 Mitigation

There would be no significant long-term effects on esthetics or visual resources in the project area, therefore, no mitigation would be required. All areas impacted by the project would be revegetated and restored to remain consistent with preconstruction conditions

3.11 Cultural Resources

3.11.1 Existing Conditions

Regulatory Setting

Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800) requires Federal agencies, or those they fund or permit, to consider the effects of their actions on the properties that may be eligible for listing or are listed in the National Register of Historic Places. To determine whether an undertaking could affect National Register-eligible properties, cultural resources (including archeological, historical, and traditional cultural properties) must be inventoried and evaluated for listing in the National Register prior to implementation of the undertaking.

CEQA also requires that for public or private projects financed or approved by public agencies, the effects of the projects on historical resources and unique archeological resources must be assessed. Historical resources are defined as buildings, sites, structures, objects, or districts that have been determined to be eligible for listing in the California Register of Historical Resources. Properties listed in the National Register are automatically eligible for listing in the California Register.

As a component of the American River Watershed Project, the Howe Avenue project is subject to the stipulations of the 1991 Programmatic Agreement (PA) among the Corps of Engineers, Bureau of Reclamation, California State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Implementation of the American River Watershed Project. The PA requires the Corps consult with the State Historic Preservation Officer (SHPO) and signatories of the agreement regarding its determinations of eligibility and findings of effect once an alternative has been selected. The American River Parkway Plan also requires preservation and interpretation of archeological and historical resources within the Parkway.

Cultural Setting

The term “Cultural resources” is used to describe several different types of properties: prehistoric and historic archeological sites; architectural properties, such as buildings, bridges, and infrastructure; and resources of importance to Native Americans (traditional cultural properties). Artifacts include any objects manufactured or altered by humans.

Prehistoric archeological sites date to the time before recorded history and in this area of the U.S. are primarily sites associated with Native American use before the arrival of Europeans. Archeological sites dating to the time when these initial Native American-

European contacts were occurring are referred to as protohistoric. Historic archeological sites can be associated with Native Americans, Europeans, or any other ethnic group. In the study area, these sites include the remains of historic structures and buildings.

Structures and buildings are considered historic when they are more than 50 years old or when they are exceptionally significant. Exceptional significance can be gained if the properties are integral parts of districts meet the criteria for eligibility for listing in the National Register or if they meet special criteria considerations.

A traditional cultural property is defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King, n.d.). Although normally associated with Native Americans, traditional cultural properties can include those that have significance derived from the role the property plays in any cultural group's or community's historically rooted beliefs, customs, and practices.

Cultural Resources in the Area of Potential Effects (APE)

Discussion of cultural resources has been provided in the American River Watershed, California Long-Term Study Final Supplemental Plan Formulation Report/Environmental Impact Statement/Environmental Impact Report, Volume II: Appendix A, Attachment 1, Appendix 1E (Corps, 2002b). This study provided a general overview and background research for cultural resources within the entire American River Watershed Project and did not focus on any particular project component area. The study identified no cultural resources that fall within the Howe Avenue APE.

Records and Literature Search

April 7, 2008 a Records and Literature search was conducted at CSU, Sacramento with negative results for cultural resources. The area of potential effects (APE) has been surveyed for cultural resources seven times since 1978 for various projects. Though the records and literature search indicated that six surveys have taken place within the broader WRDA 99 Remaining Sites Project, only three of these included all or portions of the Howe Avenue APE. In 1995 Dames & Moore surveyed the lower American River for the American River Watershed Investigation project (Nillson et al. 1995). In 2001 JRP Historical Consulting services conducted a transmission line survey for the Western Area Power Administration (WAPA) (Herbert and Blosser 2001) and Peak and Associates surveyed a proposed bike trail (Peak 2001).

These surveys resulted in the location of only one cultural resource, CA-SAC-481-H, the American River left and right bank levees. Flint and Bradley (1995) recorded the levee as an historical site during the 1995 Dames & Moore American River Survey. During the WAPA survey Herbert and Blosser (2001) updated the CA-SAC-481-H site report and provided a very detailed and thorough history of the levee. Prior to 1951 a levee existed in the APE but the present levee was built in the early 1950s. It and other

levees in the area were extensively repaired and maintained into the 1960s. Periodic repair and maintenance has continued since (Herbert and Blosser 2001). All surveys were negative for cultural resources. With the exception of the Losee and Dames & Moore surveys all projects were done pursuant to the California Environmental Quality Act. The information from the Dames & Moore report was used to obtain clearance under Section 106 of the National Historic Preservation Act on June 17, 1998 for the American River Project, Lower American River Slurry Wall, North Bank.

Field Survey

On June 10th 2009 a field survey was conducted at the project site. One isolated potentially historic shard of a white unimproved earthenware plate with blue decoration was encountered as was an isolated prehistoric cobble mortar. Both of these items were encountered out of their depositional context on an old bulldozer push pile. Given the lack of contextual integrity, these items cannot comprise an archaeological site. Coordination with SHPO is ongoing.

3.11.2 Environmental Effects

Basis of Significance

An alternative would be considered to have a significant adverse effect on cultural resources if it diminishes the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Types of effects include physical destruction, damage, or alteration; isolation or alteration of the character of the setting; introduction of elements that are out of character; neglect; and transfer, lease, or sale.

No Action Alternative

The no-action alternative assumes that no levee improvements would be constructed by the Corps. The cultural resources are expected to remain as described in the existing conditions and there would be no effects to these resources.

Construct Cutoff Levee Improvements

The project, as planned, will not have an effect on properties listed in, or are eligible for listing in the National Register of Historic Places. The section of the north levee that was record in 1994, and again in 2001 was recommended as ineligible by the site's recorder, JRP Historical Group, Inc. They cited the lack of integrity of the levee due to regular alteration and maintenance during the levee's period of significance of 1955 to 1978.

3.11.3 Mitigation

Inasmuch as there are no cultural resources that will be recommended as eligible for listing in the National Register of Historic Places, no mitigation measures are

warranted. The project would have no effect on any other known prehistoric or historic resources.

The possibility exists that potentially significant unidentified cultural remains could be encountered during project construction. If buried or otherwise obscured cultural resources are encountered during construction, activities in the area of the find would be halted, and a qualified archeologist would be consulted immediately to evaluate the find.

Should any potentially significant cultural resources be discovered, compliance with 36 CFR 800.13(b), "Discoveries without prior planning," would be implemented. Data recovery or other mitigation measures might be necessary to mitigate adverse effects to significant properties. Implementation of Mitigation Measure CUL-MM-1, Compliance With National Historic Preservation Act of 1966, Historic and Archeological Resources Protection Act, and Protection of Historic Properties, would reduce this effect to a less-than-significant level.

4.0 Growth-Inducing Effects

The proposed action alternative would not induce growth in or near the project area. Local population growth and development would be consistent with the draft Sacramento County General Plan (2003a). As mentioned previously, the goal of the proposed action alternative is to construct levee improvements in one reach along the American River that would meet Corps requirements for levee height and width. In addition, construction, operation, and maintenance of the improved levee would not result in a substantial increase in the number of permanent workers or employees.

5.0 Cumulative Effects

The NEPA regulations and CEQA guidelines require an EIS/EIR discuss project effects that, when combined with the effects of other projects, result in significant cumulative effects. The NEPA regulations define a cumulative effect as:

"The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor or collectively significant actions taken over a period of time" (40 CFR 1508.7).

The CEQA Guidelines require an EIR discuss cumulative effects "when they are significant" (Section 15130). The CEQA Guidelines define cumulative effects as "two or more individual affects which, when considered together, compound or increase other environmental impacts" (Section 15355). Additionally, the CEQA Guidelines state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to the other closely related past, present, and reasonable foreseeable probable future projects" (Section 15355).

The NEPA and CEQA require that an environmental evaluation discuss cumulative projects effects. The effects of the proposed construction of the Common Features Project would result in minor net cumulative effects for some resources. Resources such as wildlife habitat would be affected somewhat during construction, but should recover to comparable levels regionally over the long term as a result of mitigation measures. Improved and new outdoor recreation facilities in the lower American river floodway would result in beneficial cumulative effects regionally and over time.

The Common Features Project's Proposed Alternative would likely have no adverse cumulative effects on topography and soils, land use, socioeconomics, noise, recreation and visual resources, cultural resources, HTRW, fisheries, vegetation and wildlife, or special-status species. There would be short term cumulative effects on traffic and air quality. The amounts of traffic and emissions would increase due to the operation of construction, and mitigation measures would be implemented to reduce the effects.

The cumulative effects of the Common Features Project were addresses in the 1996 SEIR/EIR. Cumulatively, other ongoing regional flood control projects could have beneficial effects by raising the level of flood protection provided to lands in the Sacramento Valley region, thereby reducing the risk of adverse effects related to floods. At the same time, however, the projects could reduce the riparian ecosystems along the river where construction would take place. Mitigation would occur, resulting in no loss riparian values, but causing temporary losses and probable changes in the specific types, quantities, and locations of the habitat.

5.1 Local Projects

This section briefly describes other major Federal projects in the Sacramento area. All of these projects are required to evaluate the effects of the proposed project features on environmental resources in the area. In addition, mitigation or compensation measures must be developed to avoid or reduce any adverse effects to less than significant based on Federal and local agency criteria. Those effects that cannot be avoided or reduced to less than significant are more likely to contribute to cumulative effects in the area.

5.1.1 Long-Term Reoperation of Folsom Reservoir

The current water control manual for Folsom Reservoir requires 400,000 acre-feet of flood storage capacity during the flood season. However, the reservoir is currently operated for additional flood storage capacity through an agreement between the U.S. Bureau of Reclamation and SAFCA. This “interim reoperation” requires a variable flood storage capacity of 400,000 to 670,000 acre-feet, depending on upstream storage conditions. An additional component of the long-term reoperation plan is to reconfigure the penstock intake shutters to improve water temperature control operations. An EIR was prepared by SAFCA for this action (SAFCA, 2000).

A long-term reoperation plan is currently being prepared to update the approved flood control diagram to a variable 400,000 to 600,000 acre-feet of required flood storage capacity. Implementation of this plan will require completion of physical improvements to Folsom Dam's outlet works that will allow more efficient use of the storage space allocated to flood control. SAFCA's EIR included a quantitative analysis of operational changes in this EIR focused on the change from a fixed 400,000 acre-foot flood control diagram to a variable 400,000 to 600,000 acre-foot diagram. The assumptions for this analysis included the completion of the outlet modifications and surcharge storage projects.

5.1.2 Folsom Dam Mini Raise

The Folsom Dam Mini Raise Project was authorized by Congress in 2003. As part of this project, the Corps would raise and strengthen the dam. These components, when combined with the other authorized components of the American River Watershed Project, would reduce the annual probability of flooding in Sacramento from 1 in 90 to 1 in 230. The Mini-Raise Project also includes environmental restoration features for wildlife habitat along the lower American River Parkway. In addition, temperature control shutters at Folsom Dam would be mechanized to improve the regulation of water temperature to increase native salmon and steelhead populations.

5.1.3 Folsom Bridge Project

As part of the Mini-Raise Project authorization, Congress has directed the Corps to construction a new bridge downstream of Folsom Dam Road. Part of the American River Watershed Project, the new bridge will alleviate traffic congestion in downtown Folsom associated with the closure of Folsom Dam Road. The road formerly accommodated 18,000 vehicles a day. Construction of the bridge began in 2007 and was completed March 28th 2009.

5.1.4 Folsom Dam Advanced Release

The Corps in coordination with the Department of Interior is in the process of updating the Flood Management Plan for Folsom Dam to increase flood protection by

altering the timing of flood control releases from the dam, which would take advantage of the increased release capacity generated by the modification of the outlets at Folsom Dam. The flood control release diagram would be based on the Advanced Hydrologic Prediction System of the National Weather Service.

5.1.5 Lower American River Common Features Project

Based on congressional authorizations in 1996 and 1999, the Corps, the Board, and SAFCA have undertaken various improvements to the levees along the north and south banks of the American River and the east bank of the Sacramento River. The most recent improvements include erosion protection at river miles 6.4 left bank, 6.9 left bank, 7.0 right bank, and 10.2 left bank. These sites were completed in December 2004 and provided 100-year flood protection for many Sacramento residents.

Construction projects completed in 2009 include the WRDA 1996 R4 levee improvement project would repair an existing the outlet structure which is located at River Mile (RM) 5.4 on the right (north) bank along the American River just east of the Cal Expo State Fairgrounds.

WRDA 1996 remaining sites Phase 1 Sites R1, R5, R6, L12, would involve repair work constructing slurry walls to connect to existing slurry walls to improve levee strength. The project would repair seepage problems on flood control levees at one site at RM 62 on the right (east) bank of the Sacramento River, two sites between RM 05 and RM 06 on the right (north) bank of the American River, and one site on the south (left) bank of the American River between RM 08 and RM 09. Site R1 was completed in 2009; Site R12 was completed in 2010; Site R5 is scheduled for construction in 2011 and Site R6 is currently scheduled for construction in 2012.

Jacob Lane Reach B Levee Improvements is a remaining WRDA 1999 site which requires widening the levee on the American River from RM 11.5 to RM 12.7 to meet Corps standards was completed in 2010.

The Mayhew Levee Raise was added as an authorized component of the American River Common Features project in WRDA 1999 and began construction in 2008. The Mayhew Drain Closure Structure project was also added as and authorized component of the American River Common Features project in WRDA 1999 was completed in 2009.

5.1.6 Sacramento River Bank Protection Project

The Sacramento River Bank Protection Project (SRBPP) was authorized to protect the existing levees and flood control facilities of the Sacramento River Flood Control Project. The SRBPP is a long-range program of bank protection authorized by the Flood Control Act of 1960. The SRBPP directs the Corps to provide bank protection along the Sacramento River and its tributaries, including that portion of the lower American River bordered by Federal flood control project levees. Beginning in 1996,

erosion control projects at five sites covering almost 2 miles of the south and north banks of the lower American River have been implemented. Additional sites at RM 149 and 56.7 on the Sacramento River totaling one-half mile have been constructed since 2001. Design for approximately one mile of bank protection in the "Pocket" area of Sacramento is an ongoing project, and additional sites requiring maintenance would continue to be identified indefinitely until the remaining authority of approximately 30,000 linear feet is exhausted. Construction is currently scheduled in 2013 at RM 0.5 near Discovery Park to create a habitat mitigation area to offset bank protection impacts to steelhead and salmon. This work would involve creating aquatic and riparian habitat to provide compensation for unavoidable habitat losses due to past and future levee improvements and bank protection work. Also in 2011, along the lower American River at RM 10.0 and RM10.6 is to repair erosion, prevent continuing erosion, and provide bank protection.

These projects would help to improve flood risk management to residents in the Sacramento area by improving the integrity of the levees along the American and Sacramento Rivers. The Lower American River Common Features Project and the Sacramento River Bank Protection Project would also help meet FEMA's 100-year flood criteria for the Sacramento area levee system. These would be considered beneficial cumulative effects.

5.1.7 Natomas Levee Improvement Project

The Natomas Levee Improvement Project was authorized in 2007 as an early-implementation project initiated by SAFCA in order to provide flood protection to the Natomas Basin as quickly as possible. These projects consist of improvements to the perimeter levee system of the Natomas Basin in Sutter and Sacramento Counties, California, as well as associated landscape and irrigation/drainage infrastructure modifications. SAFCA, DWR, CVFPB, and USACE have initiated this effort with the aim of incorporating the Landside Improvements Project and the Natomas Levee Improvement Project into the Federally authorized American River Common Features Project (USACE 2008).

5.2 Cumulative Effects

Land Use

The River Corridor Management Plan and American River Parkway Plan recognize the American River Parkway as the key feature of the American River flood control system in Sacramento, and consider flood management the primary land use on the Parkway. The use of Parkway land to provide flood protection to the Sacramento area is consistent with these plans. As a result, the project is consistent with adopted plans and policies on land use in the project area and would not contribute significantly to cumulative effects on land use.

Recreation

The project would have a short-term restriction on recreation access during construction. The project would have a minor, short-term restriction on recreation access during construction. This project and other similar past, present, and reasonably foreseeable future projects are not expected to result in changes to recreation access or opportunities on the Parkway and therefore are not expected to result in adverse cumulative effects.

Aesthetics and Visual Resources

The project would result in short-term and long-term changes to the aesthetics in the project area. All areas that would be disturbed during construction would be restored and revegetated upon completion of construction activities. Any trees that would be removed during construction would be replaced with native tree species.

The project would temporarily affect local scenic views and contribute to adverse cumulative effects on local aesthetics based on the presence of construction equipment and the construction of levees, but is not expected to result in a significant long-term effects on aesthetics. Thus the Howe Avenue project would not significantly contribute to cumulative effects in the project vicinity.

Traffic and Circulation

The project would result in changes in the types, volumes, and movement of traffic in the residential area during construction. Large trucks transporting equipment and materials to the work area would not be consistent with the types of residential traffic using the neighborhood streets. These trucks, as well as worker vehicles, would use the neighborhood streets to access the work areas from American River Drive. The daily number of trips during construction would actually vary, depending on the work being conducted and the duration of the work. However, the increases in traffic would not be significant as compared with existing levels of neighborhood traffic on all but one street proposed as part of a haul route. During construction, trucks and worker vehicles would be entering and exiting the residential area via University Avenue , American River Drive, and neighborhood roadways. This could disrupt the traffic flow at these intersections and possibly pose a safety hazard to other motorists, pedestrians, and bicyclists on and along these roadways and access points to the Parkway. Implementation of measures in the Traffic Management Plan would minimize traffic congestion and delays, and ensure public safety. Thus, due to the minimal increase in local traffic, and proposed mitigation measures, the project would not contribute to adverse cumulative effects on local traffic.

Noise

The project would have a temporary, short-term impact on ambient noise levels in the residential area and Parkway during construction. Movement and operation of equipment, haul trucks, and worker vehicles would generate noise in the work area, as well as on neighborhood roadways that provide access through the residential area. Noise levels could reach the high 80's dBA, depending on the type of equipment or truck. Since ambient noise levels normally range in the low to mid-50's dBA, such an increase would be significant. However, the City of Sacramento Noise Ordinaince contains a section (8.68.080) specifically exempting construction activities from the standards between the hours of 7:00 a.m. and 6:00 p.mMonday through Saturday, as well as between the hours of 9:00 a.m. and 6:00 p.m. on Sundays. As a result, the project would not contribute significantly to cumulative effects on local noise.

Air Quality

According to SMAQMD, a project is considered to have a significant cumulative effect if:

- The project requires a change in the existing land use designation (general plan amendment or rezone), and

- Projected emissions (ROG or NOx) or emission concentrations (criteria pollutants) of the proposed project are greater than the emissions anticipated for the site if developed under the existing land use designation.

- The project individually would result in a significant effect on air quality.

Construction of the Howe Avenue project is not expected to have any long-term effects on air quality since the operational activities (including inspection and maintenance) are expected to be similar to existing conditions. However, construction would result in direct, short-term effects on air quality mainly related to combustion emissions and dust emissions. If the Howe Avenue project is constructed in late 2009 it may overlap with the construction of Jacob Lane Reach B and the remaining WRDA 1996 sites, R1, R5, R6 and L12 and two sites on the lower America River 10.0L and 10.6A. Table 5 shows the combined emissions for these eight projects if they were constructed concurrently. The SMAQMD threshold would be exceeded in NO_x daily emissions and ROG daily emissions. When the project air emissions calculations indicates the project will not meet SMAQMD thresholds, the contractor will be required to follow the requirements of SMAQMD's standard mitigation program (Appendix B) which is intended to reduce NOx emissions by 20 percent. Any remaining emissions over the NOx threshold should be reduced via a mitigation fee payment. Federal standards would be slightly exceeded for NO_x. Implementation of mitigation measures during construction would reduce emissions to the extent possible. Since the project would not require a change in the existing land use designation, long-term projected emissions of criteria pollutants would be the same with or without the construction of the levee

improvements Therefore, the Howe Avenue project would not contribute significantly to cumulative effects on air quality.

Table 5. Combined Estimated Air Emissions for Concurrent Construction of Sites R1, R5, R6, and L12, Jacob Lane Reach B Levee Improvement Projects and and Sac Bank Lower American River 10.0L, 10.6L

	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	CO_2
Site Preparation & Construction						
Total emissions (lbs/day)	91.7	761.6	678.2	91.3	37.4	69,593.70
SMAQMD thresholds (lbs/day)	65	85	N/A	N/A	N/A	N/A
Total (tons/construction project)	1.6	13.2	11.5	48.9	4.9	1281.2
Total (tons/year)	16.7	139.0	99.8	16.7	6.8	12700.9
Federal standards (tons/year)	50	50	100	100	N/A	N/A

ROG = reactive organic gases
NOx = nitrogen oxides
CO = carbon monoxide
PM_{10} = particulate matter
SOx = sulfur oxides
CO_2 = carbon dioxide
Note: Estimates rounded.

Water Resources and Quality

The Howe Avenue project could result in accidental spills or leaks that could affect surface and ground water resources. Measures included during each of the project construction would be implemented to avoid or reduce these effects to less than significant. As a result, the project would not contribute significantly to cumulative effects on water resources and quality.

In addition, the Howe Avenue project may have an overall positive effect on water quality. By diminishing the possibility for a catastrophic flood event, this will avoid significant long term impacts to water quality by avoiding contamination from flooded vehicles, household and industrial chemicals, raw sewage, and other wastes that may be present in the area.

Vegetation and Wildlife

The grassland habitat that would be occupied by the staging area would be disturbed during project construction. The waterside slope of the levee would also be disturbed in order to implement the levee improvements. These areas would be restored and re-vegetated upon completion of project construction. The project would not remove any riparian habitat; however, there would be temporary disturbances to elderberry shrubs and potential disturbances to any VELB potentially occupying the shrubs. The project would result in short-term disturbances of wildlife habitat, but the project will not substantially reduce the connectivity or extent of natural vegetation and wildlife habitat along the American River. Mitigation measures through the establishment of native

vegetation on the Parkway for this and other projects including the R4 Levee Improvement Project, the R1, R5, R6, L12 Levee Improvement Project, the Jacob Lane Project and the Mayhew Levee Raise Project will have short-term effects on vegetation and wildlife associated with construction activities. However, improved habitat would be provided by planting native tree species, such as valley oak and sycamore, for mitigation measures. Such measures are expected to result in a net, long-term improvement in native vegetation and wildlife habitat values in the Parkway primarily by restoring degraded areas at a ratio higher than what was removed.

Special Status Species

The Howe Avenue Project would result in indirect effects on elderberry plants, which is the host plant for the Federally listed threatened valley elderberry longhorn beetle. However, with implementation of the conservation measures stated previously, effects to the valley elderberry longhorn beetle would be minimized.

Other local projects including the Mayhew Levee Raise Project and the Mayhew Drain Closure Structure Project will result in the removal of elderberry shrubs. The limited spatial extent of elderberry shrub removal, prevalence of existing elderberry shrubs in the project vicinity, and the transplanting of up to 140 shrubs from the Levee Raise Project area to the vicinity, the overall extent and connectivity of beetle habitat is not expected to be diminished by this project. Establishment of new, additional beetle mitigation areas on the Parkway consistent with USFWS Guidelines would result on the long-term net improvement of beetle habitat by increasing habitat extent and connectivity along the American River. While this and other projects have resulted in short-term, localized effects to beetle habitat, the incorporation of habitat mitigation on the Parkway is expected to result in the long-term, cumulative improvement to beetle habitat on the Parkway and ultimately assist in the recovery of the species. As a result, the project would not contribute significantly to cumulative adverse effects on special status species.

Fisheries

Construction of the Howe Avenue project could indirectly affect Central Valley steelhead, Winter-run Chinook salmon, and Central Valley Fall/late Fall Run Chinook salmon or their critical habitat due to potential effects to water quality. However, the project would have no affect on steelhead and salmon provided that erosion and sediment control measures implemented as part of the SWPPP are incorporated into the proposed project.

Construction activities and the staging area would be confined to the levees and terraces 50-300 hundred feet from the streambank and channel. The project includes no work in or near the stream or associated riparian vegetation, and no work in ponds, tributaries, or drainage ditches that flow into the river from the project area. Whereas other local projects may result in potential impacts to fisheries, the construction of the Howe Avenue levee improvements would not contribute significantly to cumulative adverse effects to fisheries.

Cultural Resources

Based on existing information from literature searches and field examination, no cultural resources were identified in the Howe Avenue project area. If necessary, mitigation measures would be implemented to provide for any buried resources that might be uncovered during construction. Since the anticipated effects on known and potential archaeological sites would be less than significant, the project would not contribute significantly to cumulative effects on cultural resources.

6.0 Compliance with Environmental Laws and Regulations

6.1 Federal

Archaeological Resources Protection Act of 1979, 16 U.S.C. 470, et seq. *Full Compliance.* This act prohibits the removal, sale, receipt, and interstate transportation of archaeological resources obtained illegally (without permits) from public lands. The proposed project would not involve any such archaeological resources.

Clean Air Act of 1972, as amended, 42 U.S.C. 7401, et seq. *Full compliance*. The proposed action is not expected to violate any Federal air quality standards, exceed the U.S. EPA's general conformity *de minimis* threshold, or hinder the attainment of air quality objectives in the local air basin. Implementation of best management practices would reduce NOx emissions to below local thresholds. Thus, the Corps has determined that the proposed project would have no significant effects on the future air quality of area.

Clean Water Act of 1972, as amended, 33 U.S.C. 1251, et seq. *Full compliance.* The proposed action is not expected to adversely affect surface or ground water quality or deplete ground water supplies. Best management practices would be implemented to avoid movement of soils or accidental spills into the river. No discharge of dredge or fill materials into navigable waters or adjacent wetlands would occur under the project. The Corps has determined that the proposed project would have no significant effects on the future water quality of the area.

The contractor would be required to obtain a NPDES permit from the CRWQCB, Central Valley Region, since the project would disturb 1 or more acres of land and involve possible storm water discharges to surface waters. As part of the permit, the contractor would be required to prepare a SWPPP identifying best management practices to be used to avoid or minimize any adverse effects of construction on surface waters.

Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq. *Full compliance.* In accordance with Section 7(c), the Corps obtained a list from USFWS of Federally listed and proposed species likely to occur in the project area. The only listed species potentially affected by the project would be the valley elderberry longhorn beetle. The Corps' biological assessment is that the project may affect, but is not likely to

adversely affect this species. USFWS has concurred with this determination and amended the existing Biological Opinion.

The Corps as the action agency has made the determination that there would be "no effect" on any listed species under the jurisdiction of the National Marine Fisheries Service (NMFS). As a result, consultation is not required with NMFS under Section 7 of the Endangered Species Act.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Full compliance*. This order directs all Federal agencies to identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no minority, or low-income populations in the project area. All nearby residents would benefit equally from the proposed project.

Farmland Protection Policy Act (7 U.S.C. 4201, et seq). *Full compliance*. There are no prime and unique farmlands in the project area.

Fish and Wildlife Coordination Act of 1958, as amended, 16 U.S.C. 661, et seq. *Full compliance*. A final Coordination Act Report, dated July 13, 2011, was received from USFWS.

Migratory Bird Treaty Act (15 U.S.C 701-18h). *Full compliance.* Construction would be timed to avoid physical destruction of active bird nests or young of birds that breed in the area. If this is not feasible, a qualified biologist would survey the area prior to initiation of construction. If active nests are located, a protective buffer would be delineated and the entire area avoided, preventing direct physical disturbance of nests until they are no longer active. Because only minimal removal of vegetation will be required for construction, no impacts to nesting migratory birds are anticipated.

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, et seq. *Full Compliance*. This EA/IS is in full compliance with this act. Comments received during the public review period were incorporated into the EA/IS, as appropriate, and a comments and responses appendix has been prepared. The District Engineer has considered the information in the EA/IS and the public comments and has determined that a Finding of No Significant Impact (FONSI) is appropriate. A final FONSI accompanies this document. These actions will provide full compliance with this act.

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq. *Full Compliance*. The project is in partial compliance with Section 106 of the National Historic Preservation Act (36 CFR 800). Corps Archeological staff conducted a survey of the APE for the present remaining sites project. A Records and Literature search was also conducted at CSU, Sacramento. The Corps survey was negative for cultural resources, and the record search was negative as well. In spite of the fact that portions of

the American River Levee were recorded, there is no evidence that it is eligible for listing in the National Register of Historic Places.

A letter will be sent to the SHPO asking for their concurrence with a finding of no adverse effect in accordance with 36 CFR 800.4(c)(2). A letter from the SHPO, dated July 7, 2009, concurred with our determination.

Native American Graves Protection and Repatriation Act of 1990, 23 U.S.C. 3002. *Full Compliance.* This act requires Federal agencies to (1) establish procedures for identifying Native American groups associated with cultural items on Federal lands, (2) inventory human remains and associated funerary objects in Federal possession, and (3) return such items upon request to the affiliated groups. The law also requires that any discoveries of cultural items covered by the act be reported to the head of the Federal entity, who would notify the appropriate Native Americans group. The proposed action would not involve any such cultural items.

Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.). *Full compliance*. The lower American River has been designated as a "recreational" component of the Federal Wild and Scenic Rivers system. The project would neither adversely affect the resources for which the American River was designated nor adversely affect the river's free-flowing status. All construction activities would be at least 150 to 500 feet away from the river.

6.2 State

California Clean Air Act of 1988. *Full compliance.* The SMAQMD determines whether project emission sources and emission levels significantly affect air quality based on Federal standards established by the U.S. EPA and State standards set by the California Air Resources Board. The project is in compliance with all provisions of the Federal and State Clean Air Acts.

California Endangered Species Act of 1984. *Full compliance.* The California Department of Fish and Game administers this State law providing protection of fish and wildlife resources. This act requires the non-Federal lead agencies to prepare biological assessments if a project may adversely affect one or more State-listed endangered species. No State-listed species would be adversely affected by the project.

California Environmental Quality Act, California Public Resources Code, Section 21000 et seq. *Full compliance*. This EA/IS is in full compliance with this act. All comments received during the public review period were considered and incorporated into the EA/IS, as appropriate. Based on the consideration of the information in the document and the public comment and final Negative Declaration was deemed appropriate, and accompanies this document. The Central Valley Flood Protection Board, as the non-Federal sponsor, has ensured full compliance with the requirements of this act.

7.0 Coordination and Review of the Final EA/IS

The final EA/IS and final FONSI/Negative Declaration will be circulated for 30 days to agencies, organizations and individuals known to have a special interest in the project. Copies of the final EA/IS will be posted on the SAFCA website made available for viewing at local public libraries, or provided by mail upon request. This project has been coordinated with all the appropriate Federal, State, and local government agencies including US Fish and Wildlife Service, State Historic Preservation Office, CA Department of Fish and Game, and CA Department of Water Resources.

8.0 Findings

This EA/IS evaluated the environmental effects of the proposed project of constructing levee improvements along two reaches of the American River in the Carmichael area. Potential adverse effects to the following resources were evaluated in detail: recreation, special status species, vegetation and wildlife, air quality, water resources and quality, traffic and circulation, esthetics, noise, and cultural resources.

Results of the EA/IS, field visits, and coordination with other agencies indicate that the proposed project would have no significant long-term effects on environmental resources. Short-term effects during construction would either be less than significant or mitigated to less than significance using best management practices.

Based on this evaluation, the proposed project meets the definition of a FONSI as described in 40 CFR 1508.13. A FONSI may be prepared when an action would not have a significant effect on the human environment and for which an environmental impact statement would not be prepared. Therefore, a final FONSI accompanies the final EA as an attachment.

9.0 List of Preparers

John Suazo
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18 years environmental management and environmental studies
Report preparation and coordination

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23 years environmental planning and management
Technical Review

10.0 References

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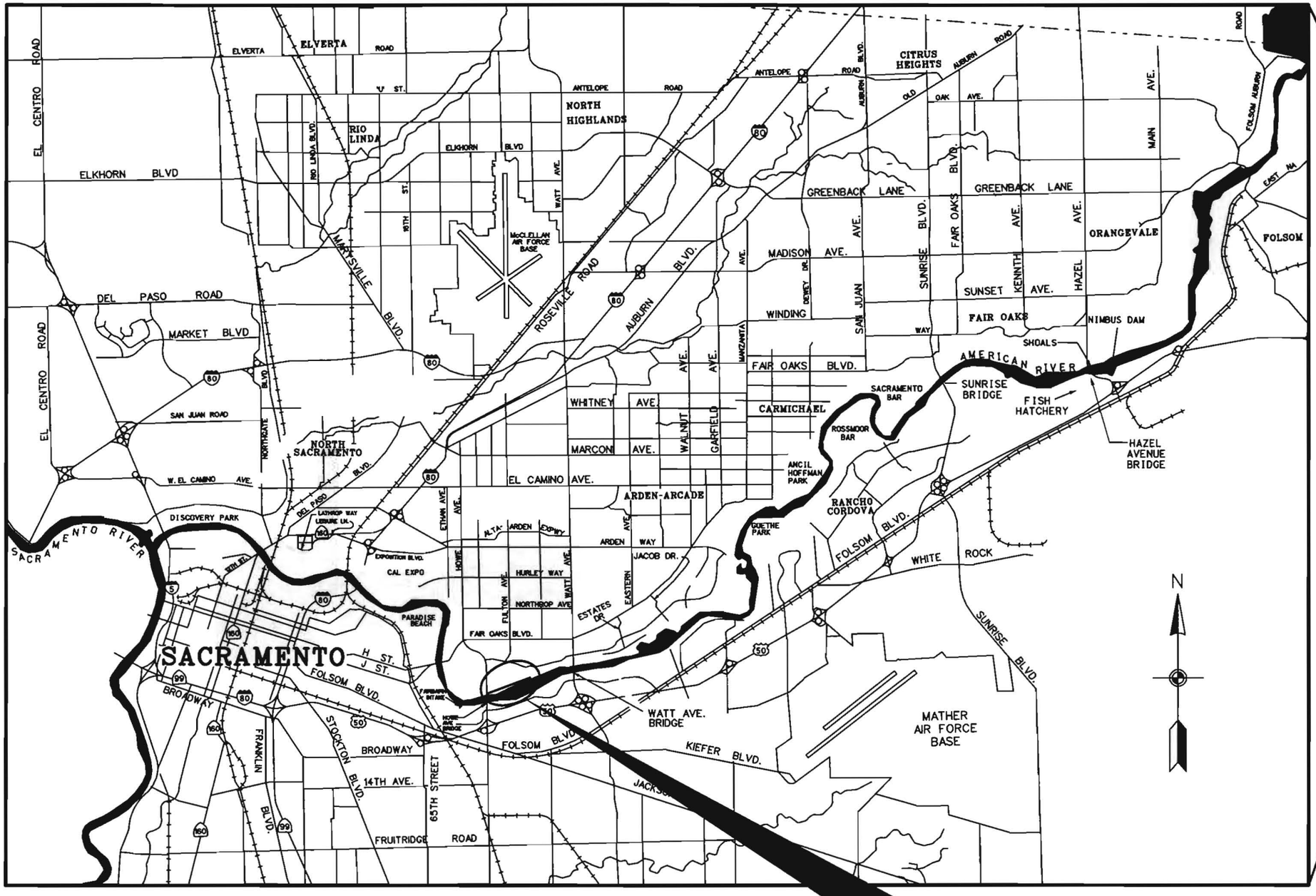
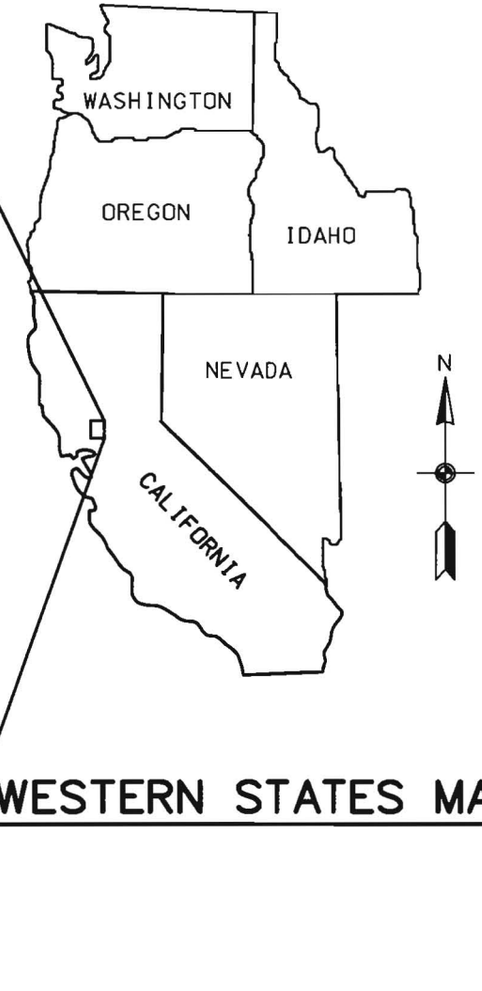
Plates



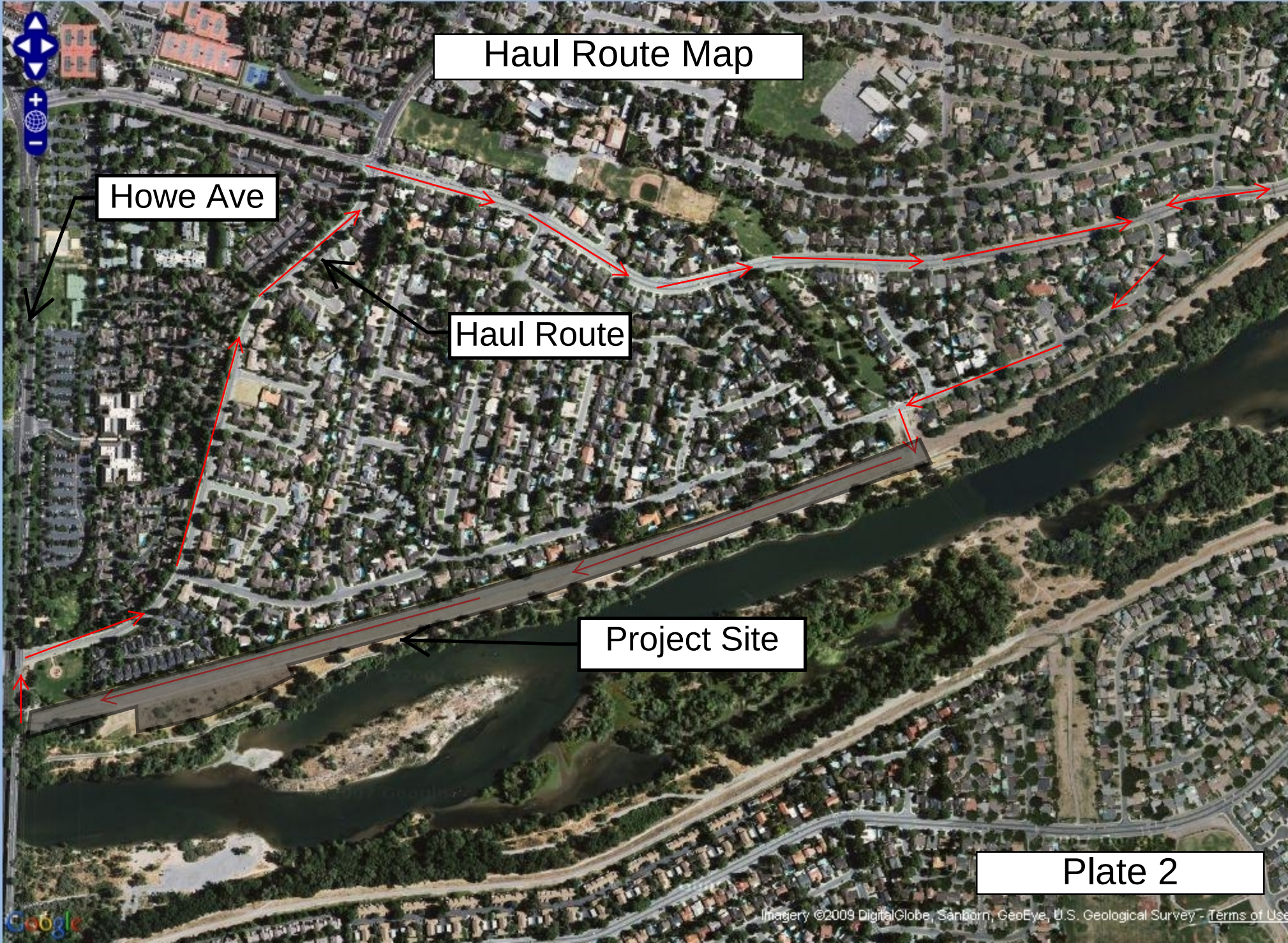
LOCATION MAP

N.T.S.



WESTERN STATES MAP

Plate 1


Haul Route Map
Howe Ave
Haul Route
Project Site
Plate 2
Imagery ©2009 DigitalGlobe, Sanborn, GeoEye, U.S. Geological Survey - Terms of Use

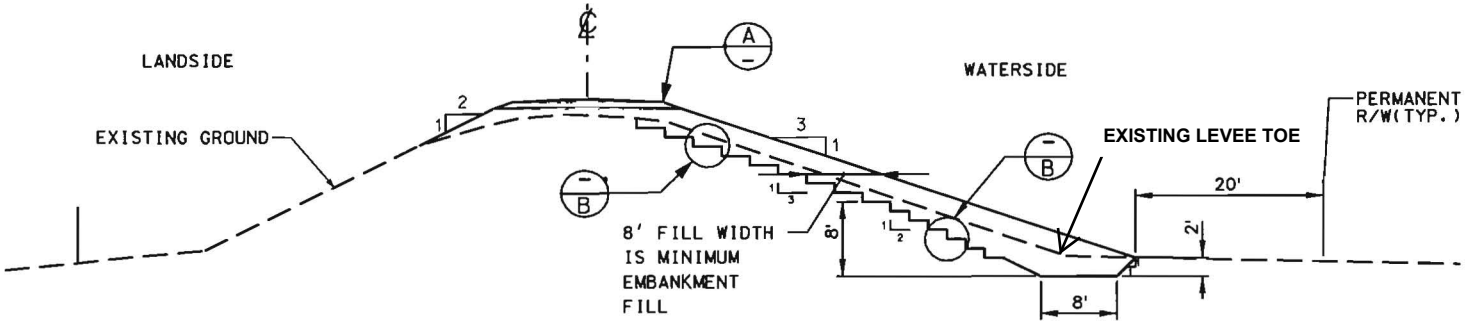
Howe Ave Features Map

Upstream Access Point

Downstream Access Point

Staging Area

Plate 3



TYPICAL CROSS SECTION - (LEVEE RAISE)

N.T.S.

Plate 4

Appendix A

Correspondence Regarding Special Status Species

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2009-F-0878-1

JUL 09 2009

Mr. Francis C. Piccola
Chief, Planning Division
U.S. Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814-2922

Subject: Reinitiation of the Biological Opinion for the Howe Avenue Levee Improvement Project, 1999 Water Resources Development Act, American River Watershed (Common Features) Project, Sacramento County, California

Dear Mr. Piccola:

This is in response to your June 1, 2009, letter requesting reinitiation of formal section 7 consultation for the Howe Avenue Levee Improvement Project, 1999 Water Resources Development Act, American River Watershed (Common Features) Project, Sacramento County, California. Your request was received in our office on June 3, 2009. This is a Fish and Wildlife Service's (Service) reinitiation to the July 16, 2003, biological opinion (1-1-00-F-0193) and addresses changes to the project description for the American River Watershed Investigation, Common Features-Howe Avenue portion of the project only. This document represents the Service's amended biological opinion on the effects to the federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle) and is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

The American River Watershed Investigation, Common Features Project was authorized by the 1999 Water Resources Development Act. The U.S. Army Corps of Engineers (Corps) is the Federal sponsor and the State of California (Central Valley Flood Protection Board) is the local sponsor for the project. The proposed actions under the Common Features project consist of levee raising, levee strengthening, and construction of slurry walls to reduce the risk of flood damages in the greater Sacramento area. Several actions have been completed or are currently under construction for this project. Due to funding constraints the project has been proceeding as funds become available.

The biological opinion of July 16, 2003 stated that under the current design of the Howe Avenue Project, no direct or indirect effects to the beetle would be incurred. Because no elderberry

shrubs were expected to become unsuitable for the beetle due to the implementation of the Howe Avenue Project, no take was anticipated. However, when conducting project activities, a 100-foot radius buffer from all elderberry shrubs was recommended. The buffer area would be fenced and avoided.

The findings and recommendations in this consultation are based on: (1) the June 1, 2009, letter from the Corps to the Service, (2) the original consultation referenced above, (3) site visits to the project area attended by Service and Corps staff on March 30, April 20 and April 28, 2009, (4) surveys conducted by the Service and Corps for elderberry shrubs within and near the project area on March 30 and April 20, 2009, and (5) other information available to the Service.

Project Description

The proposed project is located on the right (north) bank of the lower American River in Sacramento County, California. The downstream end of the reach terminates at Howe Avenue (approximately River Mile (RM) 7.7) and extends upstream 4,200 linear feet (LF) (RM 8.7). This levee work will require raising the levee height an average of one foot to comply with Corps requirements. Work also will result in increasing the overall width of the levee between 3 to 5 feet on the waterside. The completed project will stabilize the levee in this section to safely convey emergency releases to the American River of 160,000 cubic feet per second of water flow from Folsom Dam.

All of the construction activities will be conducted on the waterside of the levee. Prior to construction the affected levee slopes will be grubbed and scraped to prepare the levee for excavation. Excavation is necessary to key-in the new material required for the raising and widening activities. Grubbing and scrapping on the levee will not disturb any woody vegetation; however, the waterside haul road (which will become the waterside access road) will be located adjacent to several oak trees. These oak trees will be protected by concrete barriers (K-rails) to avoid damage from trucks and equipment. The downstream access ramp at University Park also will require widening to accommodate haul trucks exiting the site. Two cottonwood trees between 6 and 8 inches in diameter (at breast height) may need to be removed to widen the exit ramp. The levee improvements will only require earthwork. Trucks delivering soil for the raising or widening will deposit the soil on top of the levee and it will be incorporated into the existing structure to meet the required engineering design. Material excavated from the waterside slope will be temporarily stored in the staging area, located in an open area between the levee and recreation trail. Once the improvements have been completed, the levee crown will be covered with compacted aggregate base and the levee slopes will be restored to their preconstruction condition. Construction is scheduled to begin in the late summer of 2009.

Based on surveys conducted by the Service and Corps there are 36 elderberry shrubs located near the project construction sites. None of these shrubs is located in riparian habitat. After further review with the Service, the Corps determined that no shrubs or stems greater than 1 inch in diameter at ground level would be directly impacted by the project work. However, because available space in the staging area of the project is limited, it will not be possible to completely avoid effects to elderberry shrubs by maintaining a 100-foot radius from the dripline of the

shrubs. The Corps proposes to establish a 20-foot radius buffer zone around all but five of the shrubs. Concrete barriers (K-rails) will be used to protect the elderberry shrubs from the equipment and stockpiled soil within the staging area of the project. The Corps proposes the following for the five shrubs where the 20-foot buffer cannot be established:

- Shrubs #22, 23: These shrubs are located centrally within the staging area. Shrub #23 is a large, multi-stemmed shrub, while shrub #22 contains 3 small single stems growing within blackberry shrubs bordering shrub #23. The Corps is proposing to maintain the 20-foot buffer from the dripline of the shrub #23, yet the buffer would be only a few feet from the single stems of shrub #22. The buffer would be marked by k-rails to protect the area of shrubs #22-23 from the stockpiled soil in the staging area.

- Shrub #27: This shrub is located directly adjacent to the east side of the Howe Avenue overpass, at the waterside levee toe. The shrub is mature with large stems and several large, dead limbs. To meet the new levee height, the waterside access ramp to the bicycle trail also will require raising. Shrub #27 is not within the construction area of the new ramp, yet because equipment will be operating in close proximity to shrub #27, the Corps is proposing that the dead limbs be trimmed by a certified arborist. The Corps also proposes that k-rails be placed as far as possible from the dripline of the shrub (approximately 5 feet).

- Shrubs #28, 30, 31: These shrubs are located on the downstream end of the reach, just west of the power distribution towers near the waterside toe of the levee. The construction of the levee improvements will extend the waterside toe of the levee by 10 feet in this section. To construct the new levee slope, equipment will be operating around the westernmost electrical tower on the waterside. It is likely the vegetation (willows) in the area will need to be removed. Because it will be difficult to maintain a 20-foot buffer in this area, the Corps proposes that the maximum distance from the dripline of the elderberry shrubs will be established by k-rails.

In addition, the Corps proposes to implement the following conservation measures to minimize the effect on the beetle:

- Dust suppression measures will be used.
- A biological monitor will provide instruction on establishing for establishing buffer zones using orange construction fencing around the four elderberry shrubs which will be trimmed, but left in place.
- Construction representatives and contractor personnel will be given awareness training relating to the beetle and its habitat.
- Signs will be posted every 50 feet along the avoidance area with 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."

- All disturbed areas will be restored to the pre-project condition and reseeded with native grasses.

The Service has reviewed the Corps proposal and based on implementation of the above conservation measures agrees the revised project proposal will minimize any effects on the beetle. No change in the amount of incidental take is expected from implementation of the aforementioned measures. We are modifying the Service biological opinion (1-1-00-F-0193) as follows:

Project Description

The project description for the Howe Avenue Levee Improvement Project summarized above and presented in detail in the Corps' Environmental Assessment is incorporated into the biological opinion.

Proposed Conservation Measures

The conservation measures listed above are incorporated into the proposed action (page 7).

Terms and Conditions

One additional Term and Condition is added to those listed in the Service's biological opinion:

7. All placement of barriers to protect elderberry shrubs adjacent to the construction areas shall be completed prior to construction activity on the Howe Avenue Levee Improvement portion of the project.

This concludes formal consultation with the Corps on the Howe Avenue Levee Improvement Project, 1999 Water Resources Development Act, American River Watershed (Common Features) Project. As provided in 50 CFR §402.16, re-initiation of consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this opinion, please contact Harry Kahler at (916) 414-6612.

Sincerely,

Susan K. Moore
Field Supervisor

cc:
Jamie Lefevre, COE, Sacramento, California
John Suazo, COE, Sacramento, California

From: Harry_Kahler@fws.gov
To: Suazo, John SPK
Subject: Re: WRDA 99 Howe Ave BO Amendment (UNCLASSIFIED)
Date: Friday, July 01, 2011 9:49:05 AM

John,

This is in response to your electronic mail request of June 30, 2011, to amend the biological opinion (#1-1-00-F-0193) for the Howe Avenue Levee Improvement Project, as part of the 1999 Water Resources Development Act's American River Watershed (Common Features) Project. This amendment addresses one minor correction to the project description as described in your June 1, 2009, reinitiation request and the Service's July 9, 2009, response (#81420-2009-F-0878-1). This response is in accordance with section 7 of the Endangered Species Act, as amended (16 U. S. C. 1531 et seq. (Act).

The July 9, 2009, response to the Corps' reinitiation request is now amended to read (changes are in bold):

Page 2: Project Description:

From:

Construction is scheduled to begin in the late summer of 2009.

To:

Construction is now scheduled to begin in late June, 2012.

The change noted above is necessary due to delays in administration and funding. Surveys for valley elderberry shrubs were conducted at the project area by the Corps (Jamie Lefevre) with the Service (Harry Kahler) on June 7, 2011. Although the counts of elderberry stems greater than one inch had changed since previous surveys conducted in 2009, the effects of the project to the federally-threatened valley elderberry longhorn beetle remain unchanged. Furthermore, the amended project date affects no other federally-listed species.

As provided in 50 CFR § 402.16 and in the terms and conditions of the 2003 biological opinion, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this amendment to the biological opinion for the Howe Avenue Levee Improvement Project, please contact me.

Harry Kahler
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
2800 Cottage Way, Rm W-2605
Sacramento, CA 95825-1846

harry_kahler@fws.gov
W:916-414-6612
FAX: 916-414-6713

Natural Diversity Database
California Department of Fish and Game
Full Report with Sources for Selected Elements
Sac East 4/1/09

Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
Accipiter cooperii	Cooper's hawk	ABNKC12040			G5	S3		
Ardea herodias	great blue heron	ABNGA04010			G5	S4		
Athene cunicularia	burrowing owl	ABNSB10010			G4	S2		SC
Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3		
Buteo swainsoni	Swainson's hawk	ABNKC19070		Threatened	G5	S2		
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2		
Elanus leucurus	white-tailed kite	ABNKC06010			G5	S3		
Elderberry Savanna	Elderberry Savanna	CTT63440CA			G2	S2.1		
Lepidurus packardi	vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3		
Linderiella occidentalis	California linderiella	ICBRA06010			G3	S2S3		
Progne subis	purple martin	ABPAU01010			G5	S3		SC
Riparia riparia	bank swallow	ABPAU08010		Threatened	G5	S2S3		
Sagittaria sanfordii	Sanford's arrowhead	PMALI040Q0			G3	S3.2	1B.2	
Taxidea taxus	American badger	AMAJF04010			G5	S4		SC

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
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: 110718034639

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- Critical habitat, valley elderberry longhorn beetle (X)
- 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)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)

Rana draytonii
- California red-legged frog (T)

Reptiles

Thamnophis gigas
- giant garter snake (T)

Quads Containing Listed, Proposed or Candidate Species:

SACRAMENTO EAST (512C)

County Lists

Sacramento County

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
Critical habitat, valley elderberry longhorn beetle (X)
valley elderberry longhorn beetle (T)

Elaphrus viridis
delta green ground beetle (T)

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vernal pool tadpole shrimp (E)

Fish

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green sturgeon (T) (NMFS)

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Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
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winter-run chinook salmon, Sacramento River (E) (NMFS)

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Critical habitat, CA tiger salamander, central population (X)

Rana draytonii

California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Plants

Castilleja campestris ssp. succulenta
Critical habitat, succulent (=fleshy) owl's-clover (X)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Orcuttia tenuis
Critical habitat, slender Orcutt grass (X)
slender Orcutt grass (T)

Orcuttia viscida
Critical habitat, Sacramento Orcutt grass (X)
Sacramento Orcutt grass (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.

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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 and/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 include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

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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, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

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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 essential 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 to 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 of this office at (916) 414-6520.

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 October 16, 2011.

U.S. Fish & Wildlife Service
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Document Number: 110718034639

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Appendix B

Construction Emissions Estimates using the Road Construction Emissions Model Version 5.2

Road Construction Emissions Model, Version 6.3.1

Emission Estimates for -> Howe Avenue Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.6	2.7	1.7	20.2	0.2	20.0	4.3	0.1	4.2	278.0
Grading/Excavation	11.6	109.4	108.6	14.2	4.2	10.0	5.7	3.6	2.1	12,386.3
Drainage/Utilities/Sub-Grade	-	-	-	0.0	0.0	-	-	-	-	-
Paving	0.1	1.2	0.2	0.0	0.0	-	0.0	0.0	-	12.0
Maximum (pounds/day)	11.6	109.4	108.6	20.2	4.2	20.0	5.7	3.6	4.2	12,386.3
Total (tons/construction project)	0.1	1.2	1.2	0.2	0.0	0.2	0.1	0.0	0.0	137.2

Notes:

Project Start Year ->	2009
Project Length (months) ->	2
Total Project Area (acres) ->	10
Maximum Area Disturbed/Day (acres) ->	1
Total Soil Imported/Exported (yd^3/day)->	688

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Howe Avenue Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.3	1.2	0.8	9.2	0.1	9.1	2.0	0.1	1.9	126.4
Grading/Excavation	5.3	49.7	49.4	6.4	1.9	4.5	2.6	1.6	0.9	5,630.1
Drainage/Utilities/Sub-Grade	-	-	-	0.0	0.0	-	-	-	-	-
Paving	0.0	0.6	0.1	0.0	0.0	-	0.0	0.0	-	5.5
Maximum (kilograms/day)	5.3	49.7	49.4	9.2	1.9	9.1	2.6	1.6	1.9	5,630.1
Total (megagrams/construction project)	0.1	1.1	1.1	0.2	0.0	0.1	0.1	0.0	0.0	124.5

Notes:

Project Start Year ->	2009
Project Length (months) ->	2
Total Project Area (hectares) ->	4
Maximum Area Disturbed/Day (hectares) ->	0
Total Soil Imported/Exported (meters ^{3}/day)->	526

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model — Version 6.3.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

Input Type			
Project Name	Howe Avenue		
Construction Start Year	2009	Enter a Year between 2005 and 2025 (inclusive)	
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction	
Project Construction Time	2.0	months	
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock	
Project Length	0.8	miles	
Total Project Area	10.0	acres	
Maximum Area Disturbed/Day	1.0	acres	
Water Trucks Used?	1	1. Yes 2. No	
Soil Imported	515.0	yd^3/day	
Soil Exported	173.0	yd^3/day	
Average Truck Capacity	12.0	yd^3 (assume 20 if unknown)	

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Months	% Time
0.3	10
1.0	45
0.0	30
0.3	15

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%	2008	%	2009	%
Grubbing/Land Clearing	0.25	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.00
Grading/Excavation	1.00	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Drainage/Utilities/Sub-Grade	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.25	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	1.00
Totals	1.50	2.00										

Please note: You have entered a different number of months than the project length shown in cell C13.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions	User Override of Soil Hauling Defaults	Default Values							
User Input									
Miles/round trip	30.00	30						30	
Round trips/day	87.00	57						87	117
Vehicle miles traveled/day (calculated)			2610						

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	1.19	15.82	8.52	0.62	0.53	1847.96
Emission rate (grams/trip)	12.14	8.36	214.37	0.02	0.01	229.92
Pounds per day	9.9	93.1	103.1	3.6	3.1	10681.8
Tons per contruction period	0.11	1.02	1.13	0.04	0.03	117.50

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values										
Miles/ one-way trip	20.00	20							20			
One-way trips/day	2.00	2							2			
No. of employees: Grubbing/Land Clearing	3.00	1							3			
No. of employees: Grading/Excavation	5.00	3							5			
No. of employees: Drainage/Utilities/Sub-Grade	5.00	3							5			
No. of employees: Paving	0.00	4							0			35
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**						
Emission rate - Grubbing/Land Clearing (grams/mile)	0.195	0.332	3.340	0.034	0.019	426.170						
Emission rate - Grading/Excavation (grams/mile)	0.195	0.332	3.340	0.034	0.019	426.170						
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.000	0.000	0.000	0.013	0.000	0.000						
Emission rate - Paving (grams/mile)	0.195	0.332	3.340	0.026	0.019	426.170						
Emission rate - Grubbing/Land Clearing (grams/trip)	1.048	0.435	10.085	0.120	0.011	190.980						
Emission rate - Grading/Excavation (grams/trip)	1.048	0.435	10.085	0.120	0.011	190.980						
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.000	0.000	0.000	0.000	0.000	0.000						
Emission rate - Paving (grams/trip)	1.048	0.435	10.085	0.120	0.011	190.980						
Pounds per day - Grubbing/Land Clearing	0.079	0.099	1.149	0.012	0.005	117.692						
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.003	0.000	0.000	0.324						
Pounds per day - Grading/Excavation	0.079	0.099	1.149	0.012	0.005	117.692						
Tons per const. Period - Grading/Excavation	0.001	0.001	0.013	0.000	0.000	1.295						
Pounds per day - Drainage/Utilities/Sub-Grade	0.000	0.000	0.000	0.003	0.000	0.000						
Tons per const. Period - Drain/Util/Sub-Grade	0.000	0.000	0.000	0.000	0.000	0.000						
Pounds per day - Paving	0.028	0.099	1.149	0.010	0.005	5.048						
Tons per const. Period - Paving	0.000	0.000	0.003	0.000	0.000	0.014						
tons per construction period	0.001	0.002	0.019	0.000	0.000	1.632						

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day								
Grubbing/Land Clearing - Exhaust	1.00	1	5.00	40					5			
Grading/Excavation - Exhaust	1.00	1	5.00	40					5			
Drainage/Utilities/Subgrade	0.00	1	0.00	40					0			
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**						
Emission rate - Grubbing/Land Clearing (grams/mile)	1.19	15.82	8.52	0.62	0.53	1847.96						
Emission rate - Grading/Excavation (grams/mile)	1.19	15.82	8.52	0.62	0.53	1847.96						
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.00	0.00	0.00	0.00	0.00	0.00						
Pounds per day - Grubbing/Land Clearing	0.01	0.17	0.09	0.01	0.01	20.35						
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.22						
Pound per day - Grading/Excavation	0.01	0.17	0.09	0.01	0.01	20.35						
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.22						
Pound per day - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00						
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00						

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period						
Fugitive Dust - Grubbing/Land Clearing	2.00	1	20.0	0.1	4.2	0.0				3		
Fugitive Dust - Grading/Excavation	1.00	1	10.0	0.1	2.1	0.0				3		
Fugitive Dust - Drainage/Utilities/Subgrade	0.00	0	0.0	0.0	0.0	0.0				0		

Off-Road Equipment Emissions

	Default											
Grubbing/Land Clearing	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2				
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day				
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cranes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Excavators	0.00	0.01	0.03	0.00	0.00	3.26				
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Graders	0.02	0.05	0.04	0.00	0.00	3.73				
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pavers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rollers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Skid Steer Loaders	0.53	1.42	1.33	0.14	0.12	133.01				
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00				
	Grubbing/Land Clearing	pounds per day	0.6	1.5	1.4	0.1	0.1	140.0				
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.4				

Grading/Excavation	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2				
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day				
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00				
1.00	1	Graders	0.02	0.05	0.04	0.00	0.00	3.73				
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Off-Highway Trucks	1.56	4.99	15.23	0.56	0.52	1559.67				
0.00	0	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pavers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rollers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Tractors/Loaders/Backhoes	0.00	0.01	0.02	0.00	0.00	3.03				
0.00		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00				
	Grading/Excavation	pounds per day	1.6	5.1	15.3	0.6	0.5	1566.4				
	Grading	tons per phase	0.0	0.1	0.2	0.0	0.0	17.2				

Drainage/Utilities/Subgrade	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2				
Override of Default Number of Vehicles	*Program-estimate*		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day				
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cranes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Excavators	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pavers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rollers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00				
	Drainage	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0				
	Drainage	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0				

	Default											
Paving	Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2				
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day				
0.00		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Cranes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Excavators	0.00	0.01	0.03	0.00	0.00	3.26				
0.00		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00				
1.00		Graders	0.02	0.05	0.04	0.00	0.00	3.73				
0.00		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Pumps	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	1	Rollers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	2	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00				
0.00		Welders	0.00	0.00	0.00	0.00	0.00	0.00				
	Paving	pounds per day	0.0	0.1	0.1	0.0	0.0	7.0				
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0				
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.2	0.0	0.0	17.6				

		Default Values		Default Values		Default Values							Columns
Equipment		Horsepower		Load Factor		Hours/day				**Horsepower**	**oad Factor**	**Hours/Day**	**(LxMxN)**
Aerial Lifts		60		0.46		8				60	0.46	8.0	222.6
Air Compressors		106		0.48		8				106	0.48	8.0	405.8
Bore/Drill Rigs		291		0.75		8				291	0.75	8.0	1747.2
Cement and Mortar Mixers		10		0.56		8				10	0.56	8.0	46.2
Concrete/Industrial Saws		19		0.73		8				19	0.73	8.0	108.7
Cranes		399		0.43		8				399	0.43	8.0	1372.9
Crushing/Proc. Equipment		142		0.78		8				142	0.78	8.0	888.2
Excavators	1.00	168		0.57		8				1	0.57	8.0	4.6
Forklifts		145		0.30		8				145	0.3	8.0	347.0
Generator Sets		549		0.74		8				549	0.74	8.0	3251.3
Graders	1.00	174		0.61		8				1	0.61	8.0	4.9
Off-Highway Tractors		267		0.65		8				267	0.65	8.0	1388.3
Off-Highway Trucks		479		0.57		8				479	0.57	8.0	2184.0
Other Construction Equipment		75		0.62		8				75	0.62	8.0	370.5
Other General Industrial Equipment		238		0.51		8				238	0.51	8.0	971.3
Other Material Handling Equipment		191		0.59		8				191	0.59	8.0	900.8
Pavers		100		0.62		8				100	0.62	8.0	497.2
Paving Equipment		104		0.53		8				104	0.53	8.0	439.7
Plate Compactors		8		0.43		8				8	0.43	8.0	27.5
Pressure Washers		1		0.60		8				1	0.6	8.0	4.4
Pumps		53		0.74		8				53	0.74	8.0	316.5
Rollers		95		0.56		8				95	0.56	8.0	427.4
Rough Terrain Forklifts		93		0.60		8				93	0.6	8.0	448.4
Rubber Tired Dozers		357		0.59		8				357	0.59	8.0	1685.3
Rubber Tired Loaders		157		0.54		8				157	0.54	8.0	678.2
Scrapers		313		0.72		8				313	0.72	8.0	1800.0
Signal Boards		20		0.78		8				20	0.78	8.0	125.8
Skid Steer Loaders		44		0.55		8				44	0.55	8.0	193.0
Surfacing Equipment	1.00	362		0.45		8				1	0.45	8.0	3.6
Sweepers/Scrubbers		91		0.68		8				91	0.68	8.0	495.8
Tractors/Loaders/Backhoes	1.00	108		0.55		8				1	0.55	8.0	4.4
Trenchers		63		0.75		8				63	0.75	8.0	376.6
Welders		45		0.45		8				45	0.45	8.0	163.6
4													
END OF DATA ENTRY SHEET													

Appendix C

Correspondence Regarding Cultural Resources

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINER DISTRICT, SACRAMENTO
1325 J STREET
SACRAMENTO, CALIFORNA 95814

REPLY TO
ATTENTION OF

Environmental Resources Branch

Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
California State Department of Parks and Recreation
P.O. Box 942896
Sacramento, California 94296-0001

Dear Mr. Donaldson:

The US Army Corps of Engineers, Sacramento District (Corps), is writing with regard to an environmental assessment we are preparing for the proposed Howe Avenue Improvement Project (HAIP) to strengthen the flood control levees along one reach of the lower American River in the American River Parkway. This levee work entails raising the levee height an average of one foot, which will also result in an increase in the overall width of the levee between 3 to 5 feet on the waterside toe. The project entitled the Water Resources Development Act 1999, Remaining Sites Study (RSS) is designed to provide flood control on a section of the right (north) levee that was bypassed in the 1998 American River Project, Lower American River Slurry Wall project. The study's name "Remaining Sites" refers to our requirement to complete levee protection that was initiated in 1998. The study is an unfinished component of the American River Common Features Project. Our most recent related RSS project on the American River levees was the widening and raising of two reaches of the right levee between Watt Avenue and Arden Way in 2008. You concurred with our determination of no historic properties affected in a letter dated May 30, 2008 (enclosure 1). Your file number for the RSS is COE900711G.

In the interest of public safety this is a priority levee repair project, and because of the small scale of the undertaking we are requesting an expedited review pursuant to 36 CFR 800.3 (g). We are initiating consultation under Section 106 of the National Historic Preservation Act by notifying you of the proposed undertaking pursuant to 36 CFR 800.3 (a); that we have determined and documented the area of potential effects (APE) pursuant to 36 CFR 800.4(a); and that we have determined that the project qualifies for a finding of *no historic properties affected* pursuant to 36 CFR 800.4 (d)(1).

The area of potential effects (APE) is along the right bank of the American River between Howe Avenue and Watt Avenue, approximately between River Mile (RM) 7.9 and 8.7, in Section 11, Township 8 North, Range 5 East on the U.S.G.S. Carmichael topographic map dated 1997. The APE is shown on the map in enclosure 2. The APE comprises the large earthen levee, a strip of land about six feet wide along the waterside margin of the levee, and the staging area between the levee and river towards the western end of the levee. On April 7, 2008 a Records and Literature search was conducted by Corps archaeologist Daniel Bell at the North

Central Information Center at California State University, Sacramento. This record search was undertaken for the WRDA 99 Remaining Sites Project, of which the Howe Avenue Levee Improvement Project is a part.

Though the records and literature search indicated that six surveys have taken place within the broader WRDA 99 Remaining Sites Project, only three of these included all or portions of the Howe Avenue APE. In 1995 Dames & Moore surveyed the lower American River for the American River Watershed Investigation project. In 2001 JRP Historical Consulting services conducted a transmission line survey for the Western Area Power Administration (WAPA) and Peak and Associates surveyed a proposed bike trail.

These surveys resulted in the location of only one cultural resource in the current APE. CA-SAC-481H, the American River left and right bank levees were recorded as an historical site during the 1995 Dames & Moore American River Survey. During the WAPA survey Herbert and Blosser updated the CA-SAC-481H site report and provided a very detailed and thorough history of the levee; they determined that the levee was ineligible for inclusion to the National Register of Historic Places (NRHP). Prior to 1951 a levee existed in the APE but the present levee system was built in the early 1950s. It and other levees in the area were extensively repaired, rebuilt, and maintained through the 1970s. Periodic repair and maintenance has continued since.

The APE was surveyed by Corps staff on June 8, 2009. The pedestrian survey of The APE was negative for cultural resources. One isolated potentially historic sherd of a white unimproved earthenware plate with blue decoration was encountered as was an isolated prehistoric cobble mortar. Both of these items were encountered out of their depositional context on an old bulldozer push pile. The results of the survey are the subject of the enclosed Memorandum For Record (enclosure 2)

Construction and maintenance of the levee has thoroughly disturbed the river bank surface and frequent overbank floods have resulted in a great deal of sedimentation in the APE (record flood flows occurred in 1986, 1995, 1997, 1998, and 2005 in the American River Basin). These factors combine to reduce to negligible the potential for intact historic and prehistoric properties on the surface of the APE because the proposed Howe Avenue Improvement Project will not cause any subsurface disturbance. Pedestrian surveys conducted since 1995, including the current effort, confirm this assessment.

Regarding the significance of CA-SAC-481H we refer you to our earlier Section 106 consultation from May 30, 2008 in which you concurred with our determination of non-eligibility for the levee, site CA-SAC-481H in a letter dated May 30, 2008. Consequently, we have found that the APE is negative for historic properties. Therefore, we have determined that, pursuant to36 CFR 800.4(d)(1), the HAIP as planned will have no effects on proprieties that eligible for, or are listed in the National Register of Historic Places.

We request that you concur with our determinations of the APE, NRHP eligibility, and finding of no historic properties affected for the proposed HAIP. Please review the enclosed information and provide your comments if any, and concurrence with our determinations. Again, we are requesting an expedited review as this is a priority project in the interest of public safety. We are looking forward to your reply.

If you have any questions or comments please contact Mr. S. Joe Griffin, Archaeologist at (916) 557-7897 or by email at s.joe.griffin@usace.army.mil. Please contact Mr. John Hoge, Project Manager at (916) 557-5304 with any project specific questions.

Francis C. Piccola
Chief, Planning Division

Enclosures

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

July 7, 2009

In Reply Refer To: COE900711G

Francis A. Piccola
Chief, Planning Division
Department of the Army
U.S. Army Engineer District
Sacramento Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Re: Howe Avenue Improvement Project, American River Common Features Project, Sacramento County, California.

Dear Mr. Piccola:

Thank you for submitting to our office, your letter and supporting documentation regarding the undertaking noted above. The U.S. Army Engineer District, Sacramento Corps of Engineers, is seeking my comments on the effects that the subject undertaking will have on historic properties, pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA). The proposed undertaking, the Howe Avenue Improvement Project, will entail the raising of the existing levee down the right bank (north) along a reach of the American River extending from approximately River Mile (RM) 7.9 to 8.7. The levee height will be raised approximately one foot and the overall levee width at the waterside toe will be widened by approximately 3-5 feet. This undertaking is an unfinished component of the American River Common Features Project.

The Area of Potential Effects (APE) consists of the existing levee to be affected by the proposed undertaking and all staging areas. Based on their historic property identification efforts in the project APE, the COE has concluded that CA-SAC-481-H, the American River left and right bank levees, is the only historic property present. In concordance with previous consultation with me regarding this section of levee, I agreed that CA-SAC-481H was not eligible for the National Register of Historic Places (SHPO letter of May 30, 2008). Based on that evaluation, and after reviewing your letter of July 1, 2009, and supporting documentation, I have no objection to your finding of No Historic Properties Affected for the current phase of the American River Common Features Project.

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the COE may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for

considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist at phone 916-654-4614 or email wsoule@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Appendix D

Fish and Wildlife Coordination Act Report

COPY FOR YOUR INFORMATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:

81420-2009-FA-0460-2

JUL 13 2011

Alicia E. Kirchner
Chief, Planning Division
Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814

Dear Ms. Kirchner:

The Corps of Engineers (Corps) has requested coordination under the Fish and Wildlife Coordination Act (FWCA) for the American River Watershed Investigation (Common Features) WRDA 99 – Howe Avenue Project. The proposed levee improvements would occur on the north bank of the lower American River, Sacramento County, California. The enclosed report constitutes the Fish and Wildlife Service's FWCA report for the proposed repairs.

Copies of the draft FWCA report were provided to the Corps, California Department of Fish and Game, and the National Marine Fisheries Service for review and comment. No comments were received.

If you have any questions regarding this report on the proposed project, please contact Harry Kahler at (916) 414-6612.

Sincerely,

Daniel Welsh
Assistant Field Supervisor

Enclosures

cc:
Jaime LeFevre, COE, Sacramento, CA
John Suazo, COE, Sacramento, CA
Regional Manager, CDFG, Rancho Cordova, CA
Maria Rae, NOAA Fisheries, Sacramento, CA
Central Valley Flood Protection Board, Sacramento, CA

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FISH AND WILDLIFE COORDINATION ACT REPORT
AMERICAN RIVER WATERSHED INVESTIGATION
COMMON FEATURES WRDA 99 - HOWE AVENUE PROJECT
CALIFORNIA
July 2011

This is the Fish and Wildlife Service's (Service) Fish and Wildlife Coordination Act report on the effects that the proposed American River Watershed Investigation Common Features-Howe Avenue Project (Common Features Howe Avenue Project) would have on fish and wildlife resources along the lower American River in Sacramento, California. This report has been prepared under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act (48 stat. 401, as amended: 16 U.S.C. 661 et seq.).

BACKGROUND

The Common Features Howe Avenue Project is a cooperative effort among local, State of California, and Federal agencies to increase the level of flood protection for the city of Sacramento and surrounding areas. The Common Features Howe Avenue Project encompasses several actions within two authorizations; the Water Resources Development Act (WRDA) 96 and WRDA 99. These projects are located along both banks of the lower American River within the American River Parkway, as well as sections along the Sacramento River. They have been constructed by the U.S. Army Corps of Engineers (Corps) and the Central Valley Flood Protection Board (CVFPB) of the State of California, and are maintained by the American River Flood Control District. This report addresses the proposed Common Features Howe Avenue Project, under the WRDA 99 authorization.

The project levees in this area of the American River were originally constructed by the Corps in 1955-56 which coincided with the construction of Folsom Dam. The levees were designed to contain a controlled water release of 115,000 cubic feet per second (cfs) from Folsom Dam.

In March 1996, the Corps and the CVFPB completed a Supplemental Information Report (SIR) and Supplemental Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the American River Project. The SIR was undertaken to develop supplemental information to the April 1991, American River Watershed Investigation EIS/EIR. The SIR evaluated an array of alternatives to provide increased flood control to the Sacramento area. The Chief of Engineers, in a June 27, 1996 report, deferred a decision on a comprehensive flood control plan. However, the Chief did recommend that the features common to all three proposed plans be authorized as the first component of a comprehensive flood control plan for the Sacramento area. Although the Federal Administration did not make a recommendation to Congress, these "common features" were included in the WRDA of 1996.

Major storms in northern California caused record flood flows in 1986, 1995, 1997, 1998, and 2005 in the American River Basin. Outflows from Folsom Reservoir, together with high flows in the Sacramento River, caused water levels to rise above the safety margin for the levees

protecting the Sacramento area. These major storms raised concerns over the adequacy of the existing flood control system, which led to a series of investigations of the need to provide additional protection for Sacramento. Subsequently, further modifications of the American River Watershed Investigation Common Features Project were authorized in the WRDA of 1999.

In 2001, the Corps performed a geotechnical reevaluation on the project area. From the reevaluation it was determined that the levee in this reach could not pass a flow of 160,000 cfs with 3 feet of freeboard without putting excessive pressure on the levee. The work currently proposed to be constructed in this reach would help resolve these problems and bring the levee in the project area up to current standards.

PROJECT DESCRIPTION

The Corps, CVFPB, and Sacramento Area Flood Control Agency propose to strengthen the flood control levees along one reach of the lower American River in the American River Parkway. This construction would reduce flood risk by improving the levee to meet current Corps criteria in the Corps' EM 1110-2-1913 for withstanding emergency releases from Folsom Dam of 160,000 cubic feet per second (cfs) with 3 feet of freeboard (equivalent to 192,000 cfs).

The proposed work is located on the right (north) bank of the lower American River near California State University Sacramento. The downstream end of the reach terminates at Howe Avenue (about River Mile (RM) 7.7) and extends upstream 4,200 linear feet (RM 8.7). The levee work would require raising the levee height an average of 1 foot to comply with the Corps requirements as referenced above. This would also result in increasing the overall width of the levee between 3 to 5 feet on the waterside. Trucks delivering soil for the raising or widening will deposit the soil on top of the levee and it will be incorporated into the existing structure to meet the required engineering design. Material excavated from the waterside slope will be temporarily stored in the staging area, located in an open area between the levee and recreation trail. Once the improvements have been completed, the levee crown will be covered with compacted aggregate base and the levee slopes will be restored to their preconstruction condition. Construction is scheduled to begin in the summer of 2012.

BIOLOGICAL RESOURCES

The lower American River, although highly modified from conditions of 150 years ago, supports a diverse and highly valuable area for biological resources. The 23-mile-long reach of the American River Parkway encompasses about 4,000 acres, the majority of which are in a State designated floodway and contains large areas of annual grasslands, riparian forest and scrub-shrub, oak woodlands, bare sand and gravel, and surface waters of the river and its associated sloughs and dredge ponds (USFWS 2003).

Vegetation

The project area supports annual grassland, oak woodland, and riparian vegetation communities. The annual grassland is characterized by species such as ripgut brome, wild oat, and various forbs. The levees within the project area support annual grasses which are mowed as part of the maintenance program by American River Flood Control District to reduce wildfire danger.

The oak woodland within the project area occurs as single trees to small patches. Typically the understory is dominated by annual grass and other forbs and shrubs, such as elderberry. Dominant trees include valley and live oaks, with willows and other riparian species as one approaches the river.

Wildlife

The lower American River corridor provides a mosaic of riparian, riverine, grassland, and oak woodland habitat. These diverse habitats support a corresponding diversity of wildlife.

The lower American River provides feeding, resting, and/or nesting habitat for many bird species, many of which require the aquatic areas of the river and backwaters, or the riparian vegetation of the ecosystem. Riparian areas are known to support a species-rich songbird community (Gaines 1977), and the lower American River also provides habitat for many raptors, including Swainson's hawks, red-shouldered hawks, Cooper's hawks, and great-horned owls, all of which require or are closely associated with riparian vegetation. Bald eagles, which are more common around Folsom Reservoir, occasionally use the lower river, which provides roosting and foraging habitat. Waterfowl, particularly mallards and Canada geese, also use the area extensively.

More than 50 species of mammals have been recorded for the area (USFWS 1986). Common species include beaver, black-tailed jackrabbit, striped skunk, Virginia opossum, raccoon, coyote, California ground squirrel, gophers, and many small rodents and insectivores including voles, moles, shrews, deer mice, and pocket gophers. Uncommon species include several carnivores, such as badger, long-tailed weasel, river otter, gray fox, bobcat, and mink.

Reptile species of the lower American River include common kingsnake, western rattlesnake, Gilbert and western skinks, southern alligator lizard, western fence lizard, gopher snake, and several garter snakes. Common amphibians include Pacific treefrog, California newt, California slender salamander, western toad, and the introduced bullfrog.

Relatively little is known about invertebrates of the lower American River, but elderberry plants are fairly common in areas, and provide habitat for the endangered valley elderberry longhorn beetle.

Fish

The lower American River supports a diverse and abundant fish community; altogether, at least 41 species of fish are known to inhabit the river (USFWS 1986). In recognition of its

"outstanding and remarkable" fishery resources, the entire lower American River was included in the Wild and Scenic Rivers System in 1981, which provides some protection for these resources (USFWS 1991). Four anadromous species are important from a commercial and recreational perspective. The lower river supports a run of fall-run Chinook salmon, a species with both commercial and recreational values. The salmon run is sustained by natural reproduction in the river, and by hatchery production at the Nimbus Salmon and Steelhead Hatchery, operated by the California Department of Fish and Game. The average annual run of fall-run Chinook salmon in the lower American River from 1992 to 2006 is 130,162 (CDFG 2008).

Steelhead, a popular sport fish, are largely sustained in the river by production from the Nimbus Hatchery, because summer water temperatures often exceed the tolerances of juvenile steelhead, which typically spend about 1 year in the river. American shad and striped bass enter the river to spawn; these two species, introduced into the Sacramento River system in the late 1800s, now support popular sport fisheries. In addition to species of economic interest, the lower American River supports many nongame species, including Sacramento pikeminnow, Sacramento sucker, tule perch, and hardhead (USFWS 1994).

Endangered Species

Based on a search of the Sacramento East USGS quadrangle map there are several listed species which could occur within or near the project area. The species under the jurisdiction of the Service which may be affected by the project includes the valley elderberry longhorn beetle. The other species (anadromous fish) are under the jurisdiction of National Marine Fisheries Service (NOAA Fisheries). The complete list is included in Enclosure 1 as well as a summary of Federal agencies responsibilities under the Endangered Species Act of 1973, as amended.

At the proposed construction site elderberry shrub counts were conducted most recently on June 7, 2011, by Service and Corps staff. Twenty-six elderberry shrubs were identified along the levee eastward and adjacent to the proposed staging area, while an additional 10 shrubs were identified westward to Howe Avenue from the staging area. The Corps has consulted with the Service on the project effects to these shrubs which are the sole host plant for the threatened valley elderberry longhorn beetle (Enclosure 2).

DISCUSSION

Service Mitigation Policy

The recommendations provided herein for the protection of fish and wildlife resources are in accordance with the Service's Mitigation Policy as published in the Federal Register (46:15; January 23, 1981).

The Mitigation Policy provides Service personnel with guidance in making recommendations to protect or conserve fish and wildlife resources. The policy helps ensure consistent and effective Service recommendations, while allowing agencies and developers to anticipate Service

recommendations and plan early for mitigation needs. The intent of the policy is to ensure protection and conservation of the most important and valuable fish and wildlife resources, while allowing reasonable and balanced use of the Nation's natural resources.

Under the Mitigation Policy, resources are assigned to one of four distinct Resource Categories, each having a mitigation planning goal which is consistent with the fish and wildlife values involved. The Resource Categories cover a range of habitat values from those considered to be unique and irreplaceable to those believed to be much more common and of relatively lesser value to fish and wildlife. However, the Mitigation Policy does not apply to threatened and endangered species, Service recommendations for completed Federal projects or projects permitted or licensed prior to enactment of Service authorities, or Service recommendations related to the enhancement of fish and wildlife resources.

In applying the Mitigation Policy during an impact assessment, the Service first identifies each specific habitat or cover-type that may be impacted by the project. Evaluation species[1] which utilize each habitat or cover-type are then selected for Resource Category analysis. Selection of evaluation species can be based on several rationale, as follows: (1) species known to be sensitive to specific land- and water-use actions; (2) species that play a key role in nutrient cycling or energy flow; (3) species that utilize a common environmental resource; or (4) species that are associated with Important Resource Problems, such as anadromous fish and migratory birds, as designated by the Director or Regional Directors of the Fish and Wildlife Service. Based on the relative importance of each specific habitat to its selected evaluation species, and the habitat's relative abundance, the appropriate Resource Category and associated mitigation planning goal are determined.

Mitigation planning goals range from "no loss of existing habitat value" (i.e., Resource Category 1) to "minimize loss of habitat value" (i.e., Resource Category 4). The planning goal of Resource Category 2 is "no net loss of in-kind habitat value;" to achieve this goal, any unavoidable losses would need to be replaced in-kind. "In-kind replacement" means providing or managing substitute resources to replace the habitat value of the resources lost, where such substitute resources are physically and biologically the same or closely approximate those lost. Our associated mitigation planning goal for Resource Category 3 is "no net loss of habitat value while minimizing loss of in-kind habitat value."

In addition to mitigation planning goals based on habitat values, Region 8 of the Service, which includes California, has a mitigation planning goal of no net loss of acreage and value for wetland habitat. This goal is applied in all impact analyses.

In recommending mitigation for adverse impacts to fish and wildlife habitat, the Service uses the same sequential mitigation steps recommended in the Council on Environmental Quality's

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1 Note: Evaluation species used for Resource Category determinations may or may not be the same evaluation species used in a HEP application, if one is conducted.

regulations. These mitigation steps (in order of preference) are: avoidance, minimization, rectification of measures, measures to reduce or eliminate impacts over time, and compensation.

Two fish and/or wildlife habitats were identified in the project area which had potential for impacts from the project: oak woodland, and annual grassland. The resource categories, evaluation species, and mitigation planning goal for the habitats impacted by the project are summarized in Table 1.

Table 1. Resource categories, evaluation species, and mitigation planning goal for the habitats possibly impacted by the proposed WRDA 99 Howe Avenue Project, Sacramento County, California.

COVER-TYPE	EVALUATION SPECIES	RESOURCE CATEGORY	MITIGATION GOAL
Oak woodland	Acorn woodpecker Turkey Deer	2	No net loss of in-kind habitat value or acreage.
Annual grassland	Red-tailed hawk	3	No net loss of habitat value while minimizing loss of in-kind habitat value.

The evaluation species selected for the oak woodland that would be impacted are acorn woodpecker, turkey, and mule deer. Acorn woodpeckers utilize oak woodlands for nearly all their life requisites; 50-60 percent of the acorn woodpecker's annual diet consists of acorns. Acorn woodpeckers can also represent impacts to other canopy-dwelling species. Turkeys forage and breed in oak woodlands and are abundant in the project area. Mule deer also heavily depend on acorns as a dietary item in the fall and spring; the abundance of acorns and other browse influence the seasonal pattern of habitat use by deer. These latter species represent species which utilize the ground component of the habitat and both have important consumptive and non-consumptive human uses (i.e., hunting and bird watching). Based on the high value of oak woodlands to the evaluation species, and their declining abundance, the Service has determined oak woodlands which would be affected by the project should be placed in Resource Category 2, with an associated mitigation planning goal of "no net loss of in-kind habitat value."

The evaluation species selected for the annual grassland cover-type is the red-tailed hawk, which utilizes these areas for foraging. This species was selected because of the Service's responsibility for their protection and management under the Migratory Bird Treaty Act, and their overall high non-consumptive values to humans. Annual grassland areas potentially impacted by the project vary in their relative values to the evaluation species, depending on the degree of human disturbance, plant species composition, and juxtaposition to other foraging and nesting areas. Therefore, the Service designates the annual grassland cover-type in the project area as Resource Category 3. Our associated mitigation planning goal for these areas is "no net loss of habitat value while minimizing loss of in-kind habitat value."

Based on our review of the proposed project most of the impacts would be temporal losses of habitat value for species utilizing annual grasslands during construction on the affected levees and proposed staging areas. Much of this area is already highly disturbed by maintenance activities and recreation activities (hiking, running, dog walking, etc.). All disturbed areas would be reseeded with annual grasses at the completion of construction. In addition, there may be some trimming of tree limbs and shrubs, particularly the area from Howe Avenue westward to the power distribution towers, to allow for equipment access to the sites. Wildlife species utilizing these areas would be displaced during construction.

The proposed project would take place in a reach of the river with mature riparian and oak woodland occuring within and adjacent to the project area. Measures should be included in the project description to avoid impacts to migratory birds which may be nesting in affected vegetation and nearby areas throughout the riparian corridor. Pre-construction surveys should be performed to determine if there are migratory birds nesting in the area. If nests are located, work should be deferred until any young have fledged the nest.

The project is located away from the American River and thus no impacts are anticipated for fish species.

RECOMMENDATIONS

The Service recommends:

1. Avoid impacts to trees and shrubs. Any trees or shrubs removed with a diameter at breast height of 2 inches or greater should be replaced on-site, in-kind with container plantings so that the combined diameter of the container plantings is equal to the combined diameter of the trees removed. These replacement plantings should be monitored for 5 years or until they are determined to be established and self-sustaining. The planting site(s) should be protected in perpetuity.

2. Avoid future impacts to the site by ensuring all fill material is free of contaminants.

3. Avoid impacts to migratory birds nesting in trees along the access routes and adjacent to the proposed repair sites by conducting pre-construction surveys for active nests along proposed haul roads, staging areas, and construction sites. This would especially apply if construction begins in the early summer of 2012. Work activity around active nests should be avoided until the young have fledged. The following protocol from the California Department of Fish and Game for Swainson's hawk would suffice for the pre-construction survey for raptors.

   A focused survey for Swainson's hawk nests will be conducted by a qualified biologist during the nesting season (February 1 to August 31) to identify active nests within 0.25 miles of the project area. The survey will be conducted no less than 14 days and no more than 30 days prior to the beginning of construction. If nesting Swainson's hawks are found within

0.25 miles of the project area, no construction will occur during the active nesting season of February 1 to August 31, or until the young have fledged (as determined by a qualified biologist), unless otherwise negotiated with the California Department of Fish and Game. If work is begun and completed between September 1 and February 28, a survey is not required.

4. Minimize project impacts by reseeding all disturbed areas at the completion of construction with forbs and grasses.

5. Minimize the impact of trimming trees and shrubs by having these activities supervised and/or completed by a certified arborist.

6. Consult with the Service on project effects on the valley elderberry longhorn beetle and its critical habitat.

7. Contact the NOAA Fisheries for possible effects of the project on federally listed species under their jurisdiction.

8. Contact the California Department of Fish and Game regarding possible effects of the project on State listed species.

REFERENCES

CDFG (California Department of Fish and Game). 2008. Nimbus Hatchery Salmon (Online) Available, http://www.delta.dfg.ca.gov/afrp/ws_stats.asp?code=AMERR, October 17, 2008.

Gaines, D.A. 1977. The valley riparian forests of California: their importance to bird populations. Pages 57-85 *in* Riparian Forests in California: their ecology and conservation. A. Sands, ed. University of California, Davis, Inst of Ecology Publ. no. 15.

USFWS (U.S. Fish and Wildlife Service). 1986. Potential impacts to fish and wildlife from alternative actions for increasing flood control along the lower American River, California. U.S. Fish and Wildlife Service, Sacramento, California.

_____. 1991. American River Watershed Investigation, Auburn Area, Substantiating Report. U.S. Fish and Wildlife Service, Sacramento, California.

_____. 1994. Planning Aid Report for the American River Watershed Investigation, Raising of Folsom Dam Alternative. U.S. Fish and Wildlife Service, Sacramento, California.

_____. 2003. Fish and Wildlife Coordination Act Report for the American River Watershed Investigation Long-Term Evaluation. U.S. Fish and Wildlife Service, Sacramento, California.

ENCLOSURE 1

FEDERAL ENDANGERED AND THREATENED SPECIES LIST

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
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: 110711111115
Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

- *Branchinecta lynchi*
  - vernal pool fairy shrimp (T)

- *Desmocerus californicus dimorphus*
  - Critical habitat, valley elderberry longhorn beetle (X)
  - 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)
  - winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- *Ambystoma californiense*
  - California tiger salamander, central population (T)

- *Rana draytonii*
  - California red-legged frog (T)

Reptiles

- *Thamnophis gigas*
  - giant garter snake (T)

Quads Containing Listed, Proposed or Candidate Species:

SACRAMENTO EAST (512C)

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

ENCLOSURE 2

ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2009-F-0878-1

JUL 09 2009

Mr. Francis C. Piccola
Chief, Planning Division
U.S. Army Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814-2922

Subject: Reinitiation of the Biological Opinion for the Howe Avenue Levee Improvement Project, 1999 Water Resources Development Act, American River Watershed (Common Features) Project, Sacramento County, California

Dear Mr. Piccola:

This is in response to your June 1, 2009, letter requesting reinitiation of formal section 7 consultation for the Howe Avenue Levee Improvement Project, 1999 Water Resources Development Act, American River Watershed (Common Features) Project, Sacramento County, California. Your request was received in our office on June 3, 2009. This is a Fish and Wildlife Service's (Service) reinitiation to the July 16, 2003, biological opinion (1-1-00-F-0193) and addresses changes to the project description for the American River Watershed Investigation, Common Features-Howe Avenue portion of the project only. This document represents the Service's amended biological opinion on the effects to the federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle) and is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

The American River Watershed Investigation, Common Features Project was authorized by the 1999 Water Resources Development Act. The U.S. Army Corps of Engineers (Corps) is the Federal sponsor and the State of California (Central Valley Flood Protection Board) is the local sponsor for the project. The proposed actions under the Common Features project consist of levee raising, levee strengthening, and construction of slurry walls to reduce the risk of flood damages in the greater Sacramento area. Several actions have been completed or are currently under construction for this project. Due to funding constraints the project has been proceeding as funds become available.

The biological opinion of July 16, 2003 stated that under the current design of the Howe Avenue Project, no direct or indirect effects to the beetle would be incurred. Because no elderberry

shrubs were expected to become unsuitable for the beetle due to the implementation of the Howe Avenue Project, no take was anticipated. However, when conducting project activities, a 100-foot radius buffer from all elderberry shrubs was recommended. The buffer area would be fenced and avoided.

The findings and recommendations in this consultation are based on: (1) the June 1, 2009, letter from the Corps to the Service, (2) the original consultation referenced above, (3) site visits to the project area attended by Service and Corps staff on March 30, April 20 and April 28, 2009, (4) surveys conducted by the Service and Corps for elderberry shrubs within and near the project area on March 30 and April 20, 2009, and (5) other information available to the Service.

Project Description

The proposed project is located on the right (north) bank of the lower American River in Sacramento County, California. The downstream end of the reach terminates at Howe Avenue (approximately River Mile (RM) 7.7) and extends upstream 4,200 linear feet (LF) (RM 8.7). This levee work will require raising the levee height an average of one foot to comply with Corps requirements. Work also will result in increasing the overall width of the levee between 3 to 5 feet on the waterside. The completed project will stabilize the levee in this section to safely convey emergency releases to the American River of 160,000 cubic feet per second of water flow from Folsom Dam.

All of the construction activities will be conducted on the waterside of the levee. Prior to construction the affected levee slopes will be grubbed and scraped to prepare the levee for excavation. Excavation is necessary to key-in the new material required for the raising and widening activities. Grubbing and scrapping on the levee will not disturb any woody vegetation; however, the waterside haul road (which will become the waterside access road) will be located adjacent to several oak trees. These oak trees will be protected by concrete barriers (K-rails) to avoid damage from trucks and equipment. The downstream access ramp at University Park also will require widening to accommodate haul trucks exiting the site. Two cottonwood trees between 6 and 8 inches in diameter (at breast height) may need to be removed to widen the exit ramp. The levee improvements will only require earthwork. Trucks delivering soil for the raising or widening will deposit the soil on top of the levee and it will be incorporated into the existing structure to meet the required engineering design. Material excavated from the waterside slope will be temporarily stored in the staging area, located in an open area between the levee and recreation trail. Once the improvements have been completed, the levee crown will be covered with compacted aggregate base and the levee slopes will be restored to their preconstruction condition. Construction is scheduled to begin in the late summer of 2009.

Based on surveys conducted by the Service and Corps there are 36 elderberry shrubs located near the project construction sites. None of these shrubs is located in riparian habitat. After further review with the Service, the Corps determined that no shrubs or stems greater than 1 inch in diameter at ground level would be directly impacted by the project work. However, because available space in the staging area of the project is limited, it will not be possible to completely avoid effects to elderberry shrubs by maintaining a 100-foot radius from the dripline of the

shrubs. The Corps proposes to establish a 20-foot radius buffer zone around all but five of the shrubs. Concrete barriers (K-rails) will be used to protect the elderberry shrubs from the equipment and stockpiled soil within the staging area of the project. The Corps proposes the following for the five shrubs where the 20-foot buffer cannot be established:

- Shrubs #22, 23: These shrubs are located centrally within the staging area. Shrub #23 is a large, multi-stemmed shrub, while shrub #22 contains 3 small single stems growing within blackberry shrubs bordering shrub #23. The Corps is proposing to maintain the 20-foot buffer from the dripline of the shrub #23, yet the buffer would be only a few feet from the single stems of shrub #22. The buffer would be marked by k-rails to protect the area of shrubs #22-23 from the stockpiled soil in the staging area.

- Shrub #27: This shrub is located directly adjacent to the east side of the Howe Avenue overpass, at the waterside levee toe. The shrub is mature with large stems and several large, dead limbs. To meet the new levee height, the waterside access ramp to the bicycle trail also will require raising. Shrub #27 is not within the construction area of the new ramp, yet because equipment will be operating in close proximity to shrub #27, the Corps is proposing that the dead limbs be trimmed by a certified arborist. The Corps also proposes that k-rails be placed as far as possible from the dripline of the shrub (approximately 5 feet).

- Shrubs #28, 30, 31: These shrubs are located on the downstream end of the reach, just west of the power distribution towers near the waterside toe of the levee. The construction of the levee improvements will extend the waterside toe of the levee by 10 feet in this section. To construct the new levee slope, equipment will be operating around the westernmost electrical tower on the waterside. It is likely the vegetation (willows) in the area will need to be removed. Because it will be difficult to maintain a 20-foot buffer in this area, the Corps proposes that the maximum distance from the dripline of the elderberry shrubs will be established by k-rails.

In addition, the Corps proposes to implement the following conservation measures to minimize the effect on the beetle:

- Dust suppression measures will be used.
- A biological monitor will provide instruction on establishing for establishing buffer zones using orange construction fencing around the four elderberry shrubs which will be trimmed, but left in place.
- Construction representatives and contractor personnel will be given awareness training relating to the beetle and its habitat.
- Signs will be posted every 50 feet along the avoidance area with 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."

- All disturbed areas will be restored to the pre-project condition and reseeded with native grasses.

The Service has reviewed the Corps proposal and based on implementation of the above conservation measures agrees the revised project proposal will minimize any effects on the beetle. No change in the amount of incidental take is expected from implementation of the aforementioned measures. We are modifying the Service biological opinion (1-1-00-F-0193) as follows:

Project Description

The project description for the Howe Avenue Levee Improvement Project summarized above and presented in detail in the Corps' Environmental Assessment is incorporated into the biological opinion.

Proposed Conservation Measures

The conservation measures listed above are incorporated into the proposed action (page 7).

Terms and Conditions

One additional Term and Condition is added to those listed in the Service's biological opinion:

7. All placement of barriers to protect elderberry shrubs adjacent to the construction areas shall be completed prior to construction activity on the Howe Avenue Levee Improvement portion of the project.

This concludes formal consultation with the Corps on the Howe Avenue Levee Improvement Project, 1999 Water Resources Development Act, American River Watershed (Common Features) Project. As provided in 50 CFR §402.16, re-initiation of consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this opinion, please contact Harry Kahler at (916) 414-6612.

Sincerely,

Susan K. Moore
Field Supervisor

cc:
Jamie Lefevre, COE, Sacramento, California
John Suazo, COE, Sacramento, California

Harry Kahler/R8/FWS/DOI
07/01/2011 09:48 AM

To John.Suazo@usace.army.mil
cc
bcc
Subject Re: WRDA 99 Howe Ave BO Amendment (UNCLASSIFIED)

John,

This is in response to your electronic mail request of June 30, 2011, to amend the biological opinion (#1-1-00-F-0193) for the Howe Avenue Levee Improvement Project, as part of the 1999 Water Resources Development Act's American River Watershed (Common Features) Project. This amendment addresses one minor correction to the project description as described in your June 1, 2009, reinitiation request and the Service's July 9, 2009, response (#81420-2009-F-0878-1). This response is in accordance with section 7 of the Endangered Species Act, as amended (16 U. S. C. 1531 et seq. (Act).

The July 9, 2009, response to the Corps' reinitiation request is now amended to read (changes are in bold):

Page 2: Project Description:

From:

Construction is scheduled to begin in the late summer of 2009.

To:

Construction is now scheduled to begin in late June, 2012.

The change noted above is necessary due to delays in administration and funding. Surveys for valley elderberry shrubs were conducted at the project area by the Corps (Jamie Lefevre) with the Service (Harry Kahler) on June 7, 2011. Although the counts of elderberry stems greater than one inch had changed since previous surveys conducted in 2009, the effects of the project to the federally-threatened valley elderberry longhorn beetle remain unchanged. Furthermore, the amended project date affects no other federally-listed species.

As provided in 50 CFR § 402.16 and in the terms and conditions of the 2003 biological opinion, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease

pending reinitiation.

If you have any questions regarding this amendment to the biological opinion for the Howe Avenue Levee Improvement Project, please contact me.

Harry Kahler
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
2800 Cottage Way, Rm W-2605
Sacramento, CA 95825-1846

harry_kahler@fws.gov
W:916-414-6612
FAX: 916-414-6713

Appendix E

Public Comments

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

Larry Greene
AIR POLLUTION CONTROL OFFICER

SENT VIA EMAIL ONLY

July 29, 2009

Ms. Jamie LeFevre
Environmental Manager
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814

Project Title: **American River Common Features Lower American River Features as Modified by WRDA 1999 Howe Avenue Levee Improvement Program, Draft Environmental Assessment**

AQMD Number: **SAC200901345**

Dear Ms. LeFevre:

Thank you for submitting the Draft Environmental Assessment for the **American River Common Features Lower American River Features as Modified by WRDA 1999 Howe Avenue Levee Improvement Program** project to the Sacramento Metropolitan Air Quality Management District (District) for review. District staff comments follow.

1. **Table 1, Page 20**
   a. This table provides air emission thresholds. The Federal NOx and ROG thresholds should be noted as 50 tons/year rather than 100 tons/year since the SMAQMD is currently designated as a serious ozone non-attainment area.

   b. Please note that the SMAQMD and California Air Resources Board have petitioned the U.S. EPA to designate the non-attainment area as severe, so the NOx and ROG thresholds may be lowered to 25 tons/year in the near future.

   c. The table shows the SMAQMD thresholds of 85 pounds/day of NOx and 65 pounds/day of ROG. The 85 pounds/day is an appropriate construction emissions threshold. The 65 pounds/day of ROG is an operational emissions threshold, which is not applicable to construction activities associated with this project, and should be removed.

2. **Page 21, Fourth Paragraph**
   a. The fourth paragraph on page 21 indicates that in 2004 the U.S. EPA proposed to classify Sacramento County as an attainment area for the Federal PM2.5 standard. This information should be updated using information on the SMAQMD's website: http://www.airquality.org/PM2.5/index.shtml. Sacramento County will be designated as a non-attainment area for the Federal PM2.5 standard.

3. **Table 2, Page 22**
   a. This table shows NOx emissions at 109.7 pounds per day (ppd). However, the emissions calculations included in the back of the document indicate that the project will contribute 108.6 ppd of NOx. Please clarify.

   b. The table also indicates that the project will contribute to 5.7 ppd of CO_2. However, the emissions calculations in the back of the document show CO_2 emissions at 12,386.3 ppd. The latter seems to be the more likely value. Please revise accordingly.

4. **Page 23, Third Paragraph**
   a. This section discusses CO (carbon monoxide) as a contributor to global warming; however, the scientific community does not consider CO to be a greenhouse gas. Please revise the discussion to reflect the project's CO_2 (carbon dioxide) emissions as reported in the back of the document (12,386.3 ppd).

5. **Page 24, Section 3.5.4**
   a. The project is significant for construction NOx emissions at 108.6 ppd. The "best management practices" listed here do not reduce NOx emissions to a less than significant level as the document indicates. NOx emissions are reduced through our Standard Construction Mitigation. Standard Construction Mitigation should be clearly listed as a mitigation measure.

   b. This section does discuss our Standard Construction Mitigation, but it characterizes it as a permitting requirement, which it is not. SMAQMD staff reviews a contractor's construction equipment list, confirms fleet emissions to the state average fleet emissions, and endorses the construction equipment list if it meets a 20% NOx and 45% PM10 emission reduction. SMAQMD *endorses* the fleet and sends the endorsement letter to the lead agency.

   c. This section does not include information on the 45% PM10 emission reduction target that is part of our Standard Construction Mitigation. Please revise accordingly.

   d. Please include the estimated mitigation fee in the Mitigation section as well as in the listed mitigations/best management practices in the beginning of the document.

Rules and Regulations
This project is subject to applicable District rules and regulations at the time of demolition / construction. I have attached a list of rules and regulations that may apply to this project. For a complete list of rules and regulations, please call 916.874.4800 or visit www.AirQuality.org.

Please do not hesitate to contact me if you have any questions. I can be reached at 916/874-4876 or rdubose@airquality.org.

Sincerely,

R DuBose

Rachel DuBose
Air Quality Planner/Analyst

C: Larry Robinson — Sacramento Metropolitan Air Quality Management District
Karen Huss — Sacramento Metropolitan Air Quality Management District
Robin Rosenau — Army Corps of Engineers

SMAQMD Rules & Regulations Statement (revised 1/07)

*The following statement is recommended as standard condition of approval or construction document language for **all** development projects within the Sacramento Metropolitan Air Quality Management District (SMAQMD):*

All projects are subject to SMAQMD rules and regulations in effect at the time of construction. A complete listing of current rules is available at www.airquality.org or by calling 916.874.4800. Specific rules that may relate to construction activities or building design may include, but are not limited to:

Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the District early to determine if a permit is required, and to begin the permit application process. Portable construction equipment (e.g. generators, compressors, pile drivers, lighting equipment, etc) with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a California Air Resources Board portable equipment registration.

Rule 403: Fugitive Dust. The developer or contractor is required to control dust emissions from earth moving activities or any other construction activity to prevent airborne dust from leaving the project site.

Rule 417: Wood Burning Appliances. Effective October 26, 2007, this rule prohibits the installation of any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound content limits specified in the rule.

Rule 902: Asbestos. The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of asbestos containing material.

Other general types of uses that require a permit include dry cleaners, gasoline stations, spray booths, and operations that generate airborne particulate emissions.

777 12th Street, 3rd Floor ▪ Sacramento, CA 95814-1908
916/874-4800 ▪ 916/874-4899 fax
www.airquality.org

Sacramento Area Bicycle Advocates
SABA
Making Sacramento a cycling capital

909 12th Street Ste 114 Sacramento, CA 95814 (916) 444-6600 www.sacbike.org

August 3, 2009

U.S. Army Corps of Engineers, Sacramento District
Attn: Ms. Jamie LeFevre, Environmental Manager
1325 J Street
Sacramento, CA 95814

RE: Draft Environmental Assessment/Initial Study American River Common Features, Lower American River Features, Howe Avenue Levee Improvement Project

Dear Ms. LeFevre:

Thanks for the opportunity to review the Draft Environmental Assessment/Initial Study.

The document notes in Section 3.2 on Recreation that there will be potential impacts on the American River Parkway's (ARP)Jedediah Smith Trail from the projected two month closure of the Kadema and University Park access points.

One mitigation offered in the document is public outreach to provide information about changes to access. We would be happy to assist with that outreach and believe advance warming two weeks before closure via signs at the access points would be helpful.

Section 3.7 Traffic and Circulation does not describe an impact on bicycling for transportation or list a basis of significance for affects of the project on utilitarian bicycle use. We believe there should be such as basis—that there will be impacts on bicycling both from recreational and transportation standpoints. Many bicyclists use the American River Parkway trail for commuting and other trips.

We believe additional mitigation would be beneficial in offsetting the recreational and transportation impacts. There are a number of deficiencies with the existing access at Kadema and University Park that could be corrected at little or no extra cost as part of the project.

For the Kadema access the mitigations we recommend are:

Correct the less than 4"of clear space at gate to meet Caltrans Highway Design Manual 5" standards. The space between posts needs to permit passage of bicycle trailers, adult tricycles and assure adequate room for safe bicycle passage without dismounting.
Reduce the grade of the ramp from top of levee to water side toe of levee west of the access. Ideally the grade should meet ADA standards.
Pave the ramp from the top of levee to ARP bike trail

Install a yield sign at the intersection of the improved ramp access with the ARP trail
Install a guide sign to the ARP trail at Kadema Dr.

University Park access
Reduce grade of ramp from top of levee to water side toe of levee if possible
Pave ramp
Add curb cut from University Ave. to access trail
Install a yield sign at the intersection of the improved ramp access with the ARP trail
Install a guide sign to the ARP trail at University Ave.

Add a median cut through and guide sign for bicyclists at the existing parallel access that connects to University Ave. and is immediately west of Howe Avenue. While this is not in the project area, it would be the most likely detour route during project construction and closure of the other access points.

SABA is an award-winning nonprofit organization with more than 1400 members. We represent bicyclists. Our aim is more and safer trips by bike. We are working for a future in which bicycling for everyday transportation is common because it is safe, convenient, and desirable. Bicycling is the healthiest, cleanest, cheapest, quietest, most energy efficient, and least congesting form of transportation.

Yours truly,

Walt Seifert

Walt Seifert
Executive Director

cc: Ed Cox, City of Sacramento Alternate Modes Coordinator

Pacific Gas and Electric Company
Land Services Office
343 Sacramento Street
Auburn, CA 95603

Direct: (530) 889-5089
Fax: (530) 889-3392
Email: dlkn@pge.com

August 17, 2009

U.S. Army Corps of Engineers
Sacramento District
Attn: Ms. Jamie LeFevre
Environmental Manager
1325 J Street
Sacramento, CA 95814

RE: Draft Environmental Assessment / Initial Study
American River Common Features, Lower American River Features as Modified By WRDA 1999, Howe Avenue Levee Improvement Project

Dear Ms. LeFevre:

Thank you for giving PG&E the opportunity to review the Draft EA / Initial Study for the above referenced project. PG&E operates and maintains four transmission tower lines varying between 115kV and 230kV located within the project area. **Land use is restricted within the easements.** One of PG&E's concerns is for continued access to the structures and lines with heavy equipment for maintenance and repair of the towers, insulators, and wires. Another is for adequate ground clearance from the wires as set forth in California Public Utilities Commission General Order No. 95 for the proposed improvements.

It has been identified that modifications to the existing towers may be necessary due to the soil disturbance around the tower footings as a result of your construction activities. The requesting party will be responsible for the costs associated with the relocation or modification of PG&E's facilities to accommodate the proposed improvements. In order to not impact the project schedule, PG&E will rely on the requesting party to obtain the necessary permits for the U.S. Army Corps of Engineers, Regional Water Quality Control Board, U.S. Fish and Wildlife Service, California Department of Fish and Game, Central Valley Flood Protection Board, or any other permits as required.

We would like to recommend that environmental documents for the proposed project include adequate evaluation of cumulative impacts to utility systems, the utility facilities

that may be needed to serve the project, any possible relocations or modifications, and any potential environmental issues associated with extending utility service to the proposed project. This will assure the projects compliance with CEQA and reduce potential delays to the project schedule.

Should you need to excavate beneath our overhead electric conductors. For your safety and to comply with the law, there are a couple of things of which you should be aware. When operating any equipment or tools in proximity to our tower line, you must not erect, handle, or operate any such equipment or tools, closer to any of PG&E's overhead high-voltage electric conductors than the minimum clearances set forth in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety, but in no event closer than 13 feet for a 115kV line and 17 feet for a 230kV line.

General Order No. 95 of the California Public Utilities Commission sets forth certain clearance requirements for the construction and operation of electric lines. Therefore, you must control your excavations and digging, including spoils, in such a manner as not to decrease the ground-to-conductor clearance below thirty feet.

If you have any questions, you may contact me at (530) 889-5089 or dlkn@pge.com.

Sincerely,

Donald Kennedy

Donald Kennedy
Land Agent

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2009-FA-0503

AUG 5 2009

Francis C. Piccola
Chief, Planning Division
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Subject: Draft Environmental Assessment and Finding of No Significant Impact for the American River Common Features, Lower American River Features, Howe Avenue Levee Improvement Project

Dear Mr. Piccola:

This is a response to your request for comments regarding the draft Environmental Assessment (EA)/ Initial study, dated July 2009 for the American River Common Features, Lower American River Features, Howe Avenue Levee Improvement Project. The Sacramento Fish and Wildlife Office of the U.S. Fish and Wildlife Office (Service) received the request on April 16, 2009.

The project involves levee improvements along the north bank of the American River, beginning at Howe Avenue and extending for approximately 4,200 feet upstream from river mile 7.9. The draft EA evaluates the potential effects of the proposed action on the environmental resources in the project area.

Upon review of the EA draft, the Service recommends that the following comment be addressed:

Page 13—3.3.2 Environmental Effects. Construct Levee Improvements.
The paragraph mentions that tree limbs and branches overhanging the project construction area will need to be trimmed to minimize damage, and avoid removal. Also, two small cottonwood trees may need to be removed. The Service recommends that a certified arborist be used to perform all tree-trimming activities.

If you have any concerns regarding this response or other aspects of the Service's involvement with this project please contact Doug Weinrich, Habitat Conservation Division Chief, at (916) 414-6563 or Harry Kahler at (916) 414-6612.

Sincerely,

Doug Weinrich

M. Kathleen Wood
Assistant Field Supervisor

cc:
Jamie Lefevre, Army Corps of Engineers, Sacramento, California
John Suazo, Army Corps of Engineers, Sacramento, California

DEPARTMENT OF TRANSPORTATION
DISTRICT 3 - SACRAMENTO AREA OFFICE – MS19
2800 GATEWAY OAKS DRIVE
SACRAMENTO, CA 95833
PHONE (916) 274-0635
FAX (916) 263-1796
TTY 711

Flex your power!
Be energy efficient!

July 22, 2009

09SAC0050
03-SAC-50 PM 3.674
American River Common Features - Lower American River Features -
WRDA Modification – 1999, Howe Avenue Levee Improvement
Mitigated Negative Declaration / Environmental Assessment
SCH# 2009072047

Ms. Annalena Bronson
The Central Valley Flood Protection Board
3310 El Camino Avenue, Room 140
Sacramento, CA 95821

Dear Ms. Bronson:

Thank you for the opportunity to review and comment on this Lower American River Features Project. The project proposes to raise the north levee on the American River about one foot for a distance of about 4,200 linear feet upstream of Howe Avenue. Our comments are as follows:

- It appears that the proposed levee work near California State University Sacramento might disrupt use of the American River Parkway's Jedediah Smith bike trail. The posting of warning signs, use of protective barriers, and use of detours where access is restricted will reduce problems for bicyclists associated with the project.

- Since construction traffic at University Avenue and Kadema Drive might contribute to increased queuing along Howe Avenue back to Highway 50, please provide information regarding the number of truck trips the project is expected to generate at this location and expected queue lengths.

- With reference to Pages 43 and 44, information showing construction time windows for the multiple projects in this vicinity during 2009 would be appreciated. It is recommended that the use of freeway interchanges for haul routes be during off-peak hours. Peak hours occur from 6-9 AM and from 3-7 PM on weekdays.

- The traffic control plan referenced on Pages 29 and 30 should add to the listed items in the mitigated negative declaration off-peak haul times for materials and complete maps of proposed haul routes. Truck traffic on Howe Avenue and U.S. 50 should be limited to off peak hours

If you have any questions regarding these comments, please contact Ken Champion at (916) 274-0615.

Sincerely,

for ALYSSA BEGLEY, Chief
Office of Transportation Planning – South

c: Scott Morgan, State Clearinghouse

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) 574-1900**
Contact FAX: **(916) 574-1885**

August 11, 2009

File Ref: SCH# 2009072047

Annalena Bronson
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 140
Sacramento, CA 95821

Subject: American River Common Features-Lower American River Features-as modified by WRDA 1999-Howe Avenue Levee Improvements Project Draft Environmental Assessment/ Initial Study

Dear Ms. Bronson:

The California State Lands Commission (CSLC) staff has reviewed the American River Common Features-Lower American River Features-as modified by WRDA 1999-Howe Avenue Levee Improvements Project Draft Environmental Assessment/ Initial Study, dated July 13, 2009. For this project, the CSLC is both a Responsible and a Trustee agency.

As general background, the State acquired sovereign ownership of all tidelands and sub-merged 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 of waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation and open space. The State owns sovereign fee title to tide and submerged lands landward to the mean high tide line (MHTL) as they existed in nature, prior to fill or artificial accretions. On navigable non-tidal waterways, the State holds fee ownership of the bed landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, as they last naturally existed. The State's sovereign interests are under the jurisdiction of the CSLC.

To the extent that the proposed project involves State-owned sovereign lands in the American River, an amendment to General Lease – Public Agency Use PRC 7203.9 between the State Lands Commission and the Central Valley Flood Protection Board will be required.

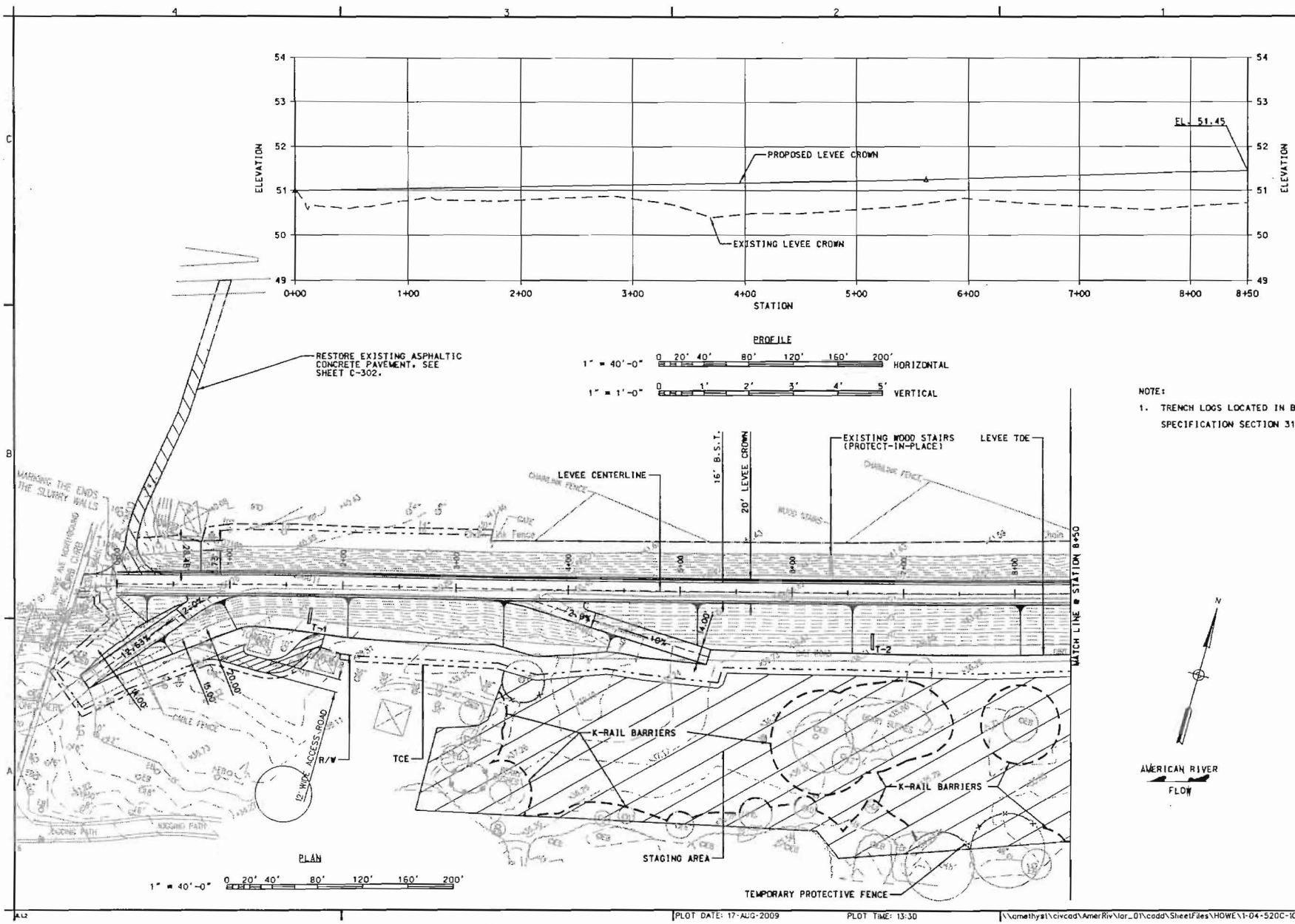
Please contact Diane Jones at (916) 574-1843 or by e-mail at jonesd@slc.ca.gov for information concerning the Commission's leasing requirements. If you have any questions on the environmental review, please contact Christopher Huitt at (916) 574-1938 or by e-mail at huittc@slc.ca.gov.

Sincerely,

Marina R. Brand

Marina R. Brand, Acting Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
Diane Jones, CSLC
Chris Huitt, CSLC



NOTE:

1. TRENCH LOGS LOCATED IN BACK OF SPECIFICATION SECTION 31 00 00.

US Army Corps of Engineers
Sacramento District

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 "J" STREET
SACRAMENTO, CA 95814-2922

SACRAMENTO COUNTY, CALIFORNIA
AMERICAN RIVER COMMON FEATURES
(REMAINING SITES) WRDA 99
CONTRACT 2 - HOWE AVENUE
HOWE AVENUE
PLAN AND PROFILE
STA. 0+00 TO STA. 8+50

Sheet reference number:
C-101
Sheet 17 of 36

MITIGATION AND MONITORING PLAN
LOWER AMERICAN RIVER COMMONS FEATURES AS MODIFIED BY WRDA 1999
HOWE AVENUE LEVEE IMPROVEMENT PROJECT

The Environmental Assessment/Initial Study (EA/IS) recognizes potentially significant environmental impacts requiring mitigation. The following mitigation measures will reduce those environmental impacts to less than significant:

Special Status Species

Valley Elderberry Longhorn Beetle (VELB)

The project could have a significant direct and indirect impact to several elderberry shrubs, the habitat of VELB. A total of 36 elderberry shrubs, all located at the downstream end of the Project could be indirectly affected. The following mitigation measures based on Fish and Wildlife Service's "Conservation Guidelines for the Valley Elderberry Longhorn Beetle" July 1999, will be implemented.

- A minimum setback of 100 feet from the dripline of all elderberry shrubs will be established if at all possible. If the 100-foot minimum buffer zone is not possible the next maximum distance allowable will be established. Due to the limited options for locating the staging area, as well as the limited space within the staging area, it would be difficult to observe the required 100-foot radius buffer zone for protection of the elderberry shrubs. The Corps will establish a 20-foot radius buffer zone around the elderberry bushes, using concrete barriers for protection. Construction will be limited until after the no-disturbance period (after June 15). The area will be fenced, flagged and maintained during construction.

- All workers will receive environmental awareness training before work begins. The training will include status, the need to avoid adversely affecting the elderberry shrub, avoidance areas and measures that should be taken by the workers during construction and contact information.

- Signs will be placed every 50 feet along the edge of the elderberry buffer zones. The signs will include the following text: "This habitat is the 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." The signs will be readable from a distance of 20 feet and will be maintained during construction.

- All placements of barriers to protect elderberry shrubs adjacent to the construction areas shall be completed prior to construction activities.

Sensitive raptors

Swainson's hawk, White-tailed kite and Cooper's hawk may be present in the area and may nest near the construction site. Pre-construction surveys will determine if a nest could be affected. Construction will be timed as much as possible to avoid activities near active nests, and the Department of Fish and Game will be consulted on appropriate measures to avoid affecting the nests.

Air Quality

Emissions would result from the use of construction equipment, truck haul trips to and from the borrow sites, and worker vehicle trips to and from the construction sites.Prior to construction, the contractor would submit a construction equipment list to be used in the project for approval by USACE and SMAQMD. SMAQMD would confirm the fleet emissions and endorse the list only if the total fleet emissions would meet a 20% reduction in NOx and a 45% reduction in PM10 in comparison to the state fleet emissions average. The contractor will be required to follow the requirements of SMAQMD's standard mitigation program (Appendix B). Any remaining emissions over the NOx threshold should be reduced via a mitigation fee payment. The projected (2012) cost of reducing one ton of NOx is $16,640 ($8.32/lb). The contractor will be responsible for payment of any required mitigation and administrative fees.

The emissions of unmitigated NOx, primarily from off-road construction equipment, would be above the significant threshold for construction; therefore, additional mitigation would need to be applied. The standard mitigation measures for the SMAQMD Recommended Mitigation for Reducing Emissions from Heavy-Duty Construction Vehicles are:

- Use diesel-fueled equipment manufactured in 2003 or later, or retrofit equipment manufactured prior to 2003 with diesel oxidation catalysts.

- Maintain properly functioning emission control devices on all vehicles and equipment.

- The contractor would provide a plan, for approval by the Corps and SMAQMD, demonstrating that the heavy-duty (> 50 horsepower) self-propelled off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction; and

- The contractor shall submit to the Corps and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

- The project shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and [DERA, City of x, SMAQMD, etc.] shall be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other SMAQMD or state rules or regulations.

- If at the time of construction, the SMAQMD has adopted a regulation applicable to construction emissions, compliance with the regulation may completely or partially replace this mitigation. Consultation with SMAQMD prior to construction will be necessary to make this determination.

- Prior to construction, the contractor must submit for a permit with SMAQMD.

Implementation of the BMP's below would reduce air quality degradation caused by dust and other contaminants:

- During construction, implement all appropriate dust control measures, such as tarps or covers on dirt piles, in a timely and effective manner during construction.

- Periodically water all construction areas having vehicle traffic, including unpaved areas, to reduce the generation of dust. Application of water should not be excessive or result in runoff into storm drains.

- Suspend all grading, earth moving, or excavation activities when winds exceed 20 miles per hour.

- Water or cover all material transported offsite to prevent the generation of dust.

- Sweep paved streets adjacent to the construction site, as necessary, at the end of each day to remove excessive accumulations of dust.

- Cover all trucks hauling dirt, sand, soil or other loose material, or maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with requirements of California Vehicle Code Section 23114. This provision would be enforced by local law enforcement agencies.

- Revegetate or pave areas cleared by construction in a timely manner to control fugitive dust.

Water Resources and Quality

The project would have a potential but short-term impact to water quality. The following best management practices will ensure that the Project will have a less-than-significant impact to water resources and water quality:

- The contractor will prepare a spill control plan and a SWPPP prior to initiation of construction. The SWPPP will be developed in accordance with guidance from the RWQCB, Central Valley Region. These plans will be reviewed and approved by the USACE before construction began.

- Implement appropriate measures to prevent debris, soil, rock and other material from entering the water. Use a water truck or other appropriate measures to control dust on haul roads, construction areas, and stockpiles.

- Properly dispose of oil and other liquids.

- Fuel and maintain vehicles in a specific area designed to capture spills. This area cannot be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water.

- Inspect and maintain vehicles and equipment to prevent dripping of oil or other liquids.

- Schedule construction to avoid the rainy season as much as possible. If rains are forecasted, implement erosion control measures will be implemented.

- Train construction workers in storm water pollution prevention practices

- Revegetate disturbed areas in a timely manner to control erosion.

Traffic and circulation

The Project would temporarily affect residential streets and major urban connector roads used as haul rote during construction.

Implementing the following mitigation measures will ensure that impacts to traffic and circulation would be less-than-significant.

- The contractor will be required to develop a Traffic Control Plan.

- Construction vehicles cannot block any roadways or private driveways. Provide access to emergency vehicles at all times.

- Haul routes should avoid schools, parks and high pedestrian use areas when possible. Crossing guards will be used when truck trips coincide with school hours and when haul routes cross student travel path

- Obey all traffic laws.

- Flagmen will be used at each roadway that crosses the levee to safely circulated traffic through the construction site.

- Use separate entrances and exits to the construction area.

- Notify local residents, businesses, schools and the City of Sacramento if road closures would occur.

- Repair roads damaged by construction.

Noise and Vibrations

Construction of the Project could have a significant impact. Implementation of the following mitigation measures will reduce this impact to less than significant.

- Limit construction activities between 6:00 a.m. and 8:00 p.m. Mondays through Fridays and 7:00 a.m. and 8:00 p.m. on Saturdays and Sundays.

- Muffle construction equipment noise by shielding intakes and exhaust on construction equipment and shroud or shield impact tools.

- Turn off all equipment and vehicles when not in use for more than 30 minutes.

- Notify residents about the type and schedule of the construction.

By: _____ Date: _____

Benjamin F. Carter

President

By: _____ Date: _____

Francis “Butch” Hodgkins

Secretary