## INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

# MANNING AVENUE BRIDGE REPLACEMENT PROJECT

**JULY 2009**


**LEAD AGENCY**
City of Reedley
1733 Ninth Street
Reedley, CA 93654
Contact: Dana Ritschel
559.637.4200, Ext. 277

**ENVIRONMENTAL CONSULTANT**
ICF Jones & Stokes
630 K Street, Suite 400
Sacramento, CA 95814
Contact: Claire Bromund
916.737.3000

# Mitigated Negative Declaration

The Community Development Director has reviewed the proposed project described below to determine whether it could have a significant effect on the environment as a result of project completion. "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

**Name of Project:** Manning Avenue Bridge Replacement Project

**Project Description:** The project would replace the structurally deficient Manning Avenue Bridge over the Kings River to improve public safety.

**Project Location and Assessor's Parcel Number:** Manning Avenue in the City of Reedley, Fresno County, approximately 11 miles east of State Route 99 and extending from Kings River Road on the west side of the Kings River to approximately 300 feet from the intersection of Manning Avenue and West Upper Bridge Avenue.

**Mailing Address and Phone Number of Contact Person:**
City of Reedley. DPW/Engineering, 1733 Ninth Street, Reedley, CA, 93654.
Contact: Dana Ritschel, (559) 637-4200

**Findings**

The City of Reedley finds the project described above will not have a significant effect on the environment in that the attached initial study identifies one or more potentially significant effects on the environment for which the project applicant, before public release of this Proposed Mitigated Negative Declaration, has made or agrees to make project revisions that clearly mitigate the effects to a less-than-significant level. The City of Reedley further finds that there is no substantial evidence that this project may have a significant effect on the environment.

The project would have no effect on agricultural resources, land use and planning, mineral resources, population and housing, public services, and utilities and service systems. The project would have no significant effect on light and glare, visual resources, and recreation and open spaces. The project would have no significant effect on air quality, biological resources, cultural resources, geology and soils, hazards and hazardous material, hydrology and water quality, noise, and transportation/traffic because the following mitigation measures would reduce potentially effects to less-than-significant levels.

**Mitigation Measures Included in the Project to Reduce Potentially Significant Effects to a Less-Than-Significant Level**

| | |
|---|---|
| Mitigation Measure AQ-1: | Implement SJVAPCD Regulation VIII Control Measures for Construction Emissions of PM10 |
| Mitigation Measure AQ-2: | Implement Enhanced Control Measures for Construction Emissions of PM10 |

| | |
|---|---|
| Mitigation Measure BIO-1: | Avoid and Minimize Potential Impact to VELB |
| Mitigation Measure BIO-2: | Compensate for Direct and Indirect Effects on VELB Habitat |
| Mitigation Measure BIO-3: | Conduct Preconstruction Surveys for Western Pond Turtle and Construct Exclusion Fencing, If Needed |
| Mitigation Measure BIO-4: | Conduct Construction Activities During Nonbreeding Season for Special-Status Raptors, Non-Special-Status Raptors, and Other Migratory Birds or Retain a Qualified Biologist to Conduct a Nesting Bird Survey before Construction Activities |
| Mitigation Measure BIO-5: | Restrict Construction Activities that Could Disturb Nesting Swallows to the Non-Breeding Season or Remove Nests During Non-Breeding Season |
| Mitigation Measure BIO-6: | Avoid Impacts to Bats Roosts Using Bat Exclusion Devices |
| Mitigation Measure BIO-7: | Replace Bat Roosting Habitat by Using Bat-Friendly Bridge Design |
| Mitigation Measure BIO-8: | Reduce Impacts to Riparian Forest |
| Mitigation Measure BIO-9: | Compensate for Permanent Loss of Riparian Vegetation |
| Mitigation Measure BIO-10: | Avoid and Minimize Potential Indirect Disturbance of the Riverine Wetland |
| Mitigation Measure BIO-11: | Protect Water Quality and Prevent Erosion in the Kings River |
| Mitigation Measure BIO-12: | Obtain Required Permits, Authorizations, Certifications, and Agreements |
| Mitigation Measure BIO-13: | Compensate for Permanent and Temporary Loss of Open Water Habitat |
| Mitigation Measure CR-1: | Implement Plan to Address Discovery of Unanticipated Buried Cultural or Paleontological Resources |
| Mitigation Measure CR-2: | Implement Plan to Address Discovery of Human Remains |
| Mitigation Measure GEO-1: | Implement Geotechnical Report Recommendations Related to Grading |
| Mitigation Measure HAZ-1: | Prepare a Risk Assessment Plan |
| Mitigation Measure HAZ-2: | Control Contamination Resulting from Previously Unidentified Hazardous Waste Materials |
| Mitigation Measure HAZ-3: | Develop and Implement a Construction Management Plan |
| Mitigation Measure HYD-1: | Low-Flow Season Construction |
| Mitigation Measure HYD-2: | Implement Requirements for a Stormwater Pollution Prevention Plan |
| Mitigation Measure HYD-3: | Identify Additional Construction-Related Best Management Practices in the Construction Plans |
| Mitigation Measure HYD-4: | Implement Provisions for Dewatering |

| | |
|---|---|
| Mitigation Measure HYD-5: | Monitor Turbidity and Suspended Solids for Installation of Sheet-Pile Cofferdam and Stream Diversion |
| Mitigation Measure HYD-6: | Implement Other Provisions for Work in Surface Waters |
| Mitigation Measure NOI-1: | Employ Noise-Reducing Construction Practices |

**Public Review Period**

Before June 26, 2009 any person may:

(1) Review the Proposed Mitigated Negative Declaration (MND); and

(2) Submit written comments regarding the information, analysis, and mitigation measures in the Proposed MND to the contact person above.

# Initial Study/Mitigated Negative Declaration for the Manning Avenue Bridge Replacement Project

*Lead Agency:*

City of Reedley
Department of Public Works/Engineering
1733 Ninth Street
Reedley, CA 93654
Contact: Dana Ritschel
559/637-4200, Ext 277

*Prepared by:*

ICF Jones & Stokes
630 K Street, Suite 400
Sacramento, CA 95814
Contact: Claire Bromund
916/737-3000

July 2009

City of Reedley. 2009. *Initial Study/Mitigated Negative Declaration for the Manning Avenue Bridge Replacement Project*. July. (ICF J&S 06540.06.) Reedley, CA. Prepared by ICF Jones & Stokes, Sacramento, CA.

Chapter 1
# Introduction and Summary

## Introduction

This document is an initial study and mitigated negative declaration (IS/MND) that addresses the potential environmental impacts of the City of Reedley's proposed Manning Avenue Bridge Replacement project. Section 15004 of the California Environmental Quality Act (CEQA) encourages early completion of environmental documentation to enable environmental considerations to influence project program and design. This IS/MND is a public information document that discloses the proposed bridge replacement project's environmental effects and informs decision-makers of the proposed project's compliance with CEQA and the State CEQA Guidelines. The City of Reedley is the lead agency for the proposed project under CEQA.

This document describes the proposed project, the existing environmental setting (conditions before implementation of the project), and the potential environmental impacts of the proposed project. Chapter 2, *Project Description*, describes the proposed project. Chapter 3, *Environmental Checklist*, identifies the anticipated environmental impacts by topic and mitigation measures that the City of Reedley would implement to avoid significant impacts.

The City of Reedley (City), in cooperation with the California Department of Transportation (Caltrans), proposes to replace the Manning Avenue Bridge (Bridge No. 42C-0010) over the Kings River. The existing bridge is rated structurally deficient and has many other deficiencies as listed in the purpose and need section of Chapter 2.

It was determined that preparation of an IS/MND would ensure compliance with CEQA on all environmental issues associated with the proposed project. A MND is proposed for this project because it has been determined that the proposed project, with mitigation measures implemented, would not have a significant effect on the environment.

This IS/MND will be circulated for public and agency review as required by CEQA. Because state agencies will act as responsible or trustee agencies, the City of Reedley will submit the IS/MND to the State Clearinghouse for distribution and a 30-day review. Comments on the IS/MND will be evaluated, and responses will be prepared to address any substantial evidence that the

proposed project may significantly affect the environment. If no such substantial evidence is indicated by the information and analysis presented in the IS/MND or in the comments received, a MND will be adopted by the City Council.

# Purpose of the Proposed Project

The primary purpose of the proposed project is to replace the structurally deficient Manning Avenue Bridge to improve public safety. The existing bridge is structurally deficient due to the poor deck condition, substandard bridge and approach guardrails, and cracks in the original bridge piers.

The specific purposes of the proposed project are the following:

- improve pedestrian safety by increasing the separation width of pedestrians and vehicles,
- improve bridge performance in the event of the maximum credible earthquake,
- correct substandard superelevation on the west approach,
- improve the aesthetics of the western gateway of the city,
- reduce maintenance costs,
- improve public safety by replacing the structurally deficient bridge,
- improve water recreation by increasing the spans between bridge piers; and
- provide sidewalks to the east of the bridge along both sides of Manning Avenue to blend in more appropriately with the sidewalks just east of the I street intersection and improve safety, mobility and the ability to develop adjacent parcels.

According to the Feasibility Study (Quincy Engineering 2007) and Supplemental Feasibility Study (Quincy Engineering 2008) prepared by Quincy Engineering, all portions of the existing structure will require replacement. The original 1929 structure and the widened 1952 structure require replacement due to existing deficiencies, while the 1974 portion of the bridge structure requires several rehabilitation measures that are not economically feasible.

The latest Caltrans maintenance report for the bridge identified damage to the asphalt concrete deck, railing, and piers, and identified scour that is causing the upstream ends of some piers to be exposed and undermined. According to the final supplemental feasibility study prepared for the proposed project (Quincy Engineering 2008), the existing bridge is structurally deficient due to the deteriorating deck condition. The existing bridge rails are substandard, and an approach guardrail is not present, which raises safety concerns (Quincy Engineering 2007). The western approach roadway also has substandard superelevation.

# Project Setting and Zoning

The proposed project is on Manning Avenue in the City of Reedley, Fresno County. The project area is approximately 11 miles east of State Route (SR) 99, extending from Kings River Road on the west side of the Kings River to approximately 350 feet from the three-way intersection of Manning Avenue, I Street, and West Upper Bridge Avenue. The current bridge configuration is 440 feet long by 89 feet 4 inches wide, with spans that range from 40 to 80 feet. It is supported by cast-in-place concrete pierwalls. The project length is approximately 2,610 feet long, including roadway realignments to match the improved bridge and stage construction. Some right-of-way acquisition would be required.

Manning Avenue is a major arterial with an average operating speed of 60 miles per hour (mph) west of the project and an arterial with an operating speed of 45 mph east of the project. The roadway and bridge have two traffic lanes in each direction (Quincy Engineering 2007) and a raised median.

The Kings River flows to the south in the project area, and the developed areas along the river focus on river recreation and riverfront residential uses. In the immediate project area, Kelley's Beach offers river access and camping. To the east of the project area is downtown Reedley. The existing bridge serves as the western gateway to the city.

The project area is currently zoned Resource, Conservation and Open Space (RCO), Central and Community Commercial (Office and Retail Zone [CC]), and Light Industrial (Limited Industrial Uses) combined with PUD (Planned Unit Development Combining District) (ML-P).

# Format of This Document

In addition to this introductory chapter, this IS/MND contains the following chapters.

- Chapter 2, *Project Description*, describes the project location, project elements, required permits and approvals, and public involvement.
- Chapter 3, *Environmental Checklist*, presents an evaluation of the proposed project's impacts by topic, following the initial study checklist format.
- Chapter 4, *References Cited*, lists the documents and individuals consulted during preparation of this document.
- Chapter 5, *List of Preparers*, identifies the individuals involved in preparing this document and their areas of technical specialty.

# Summary

No substantial evidence indicates that any aspect of this bridge replacement project (as proposed with mitigation implemented), either individually or cumulatively, would cause a significant impact on the environment. The proposed project would be implemented to avoid and minimize potentially significant environmental impacts.

This IS/MND concludes that the proposed project would potentially have a significant mitigable impact on air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and noise. The City will implement the following mitigation measures to reduce potential impacts to a less-than-significant level.

- Mitigation Measure AQ-1: Implement SJVAPCD Regulation VIII Control Measures for Construction Emissions of PM10
- Mitigation Measure AQ-2: Implement Enhanced Control Measures for Construction Emissions of PM10
- Mitigation Measure BIO-1: Avoid and Minimize Potential Impact to VELB
- Mitigation Measure BIO-2: Compensate for Direct and Indirect Effects on VELB Habitat
- Mitigation Measure BIO-3: Conduct Preconstruction Surveys for Western Pond Turtle and Construct Exclusion Fencing, If Needed
- Mitigation Measure BIO-4: Conduct Construction Activities During Nonbreeding Season for Special-Status Raptors, Non-Special-Status Raptors, and Other Migratory Birds or Retain a Qualified Biologist to Conduct a Nesting Bird Survey before Construction Activities
- Mitigation Measure BIO-5: Restrict Construction Activities that Could Disturb Nesting Swallows to the Non-Breeding Season or Remove Nests During Non-Breeding Season
- Mitigation Measure BIO-6: Avoid Impacts to Bats Roosts Using Bat Exclusion Devices
- Mitigation Measure BIO-7: Replace Bat Roosting Habitat by Using Bat-Friendly Bridge Design
- Mitigation Measure BIO-8: Reduce Impacts to Riparian Forest
- Mitigation Measure BIO-9: Compensate for Permanent Loss of Riparian Vegetation
- Mitigation Measure BIO-10: Avoid and Minimize Potential Indirect Disturbance of the Riverine Wetland
- Mitigation Measure BIO-11: Protect Water Quality and Prevent Erosion in the Kings River
- Mitigation Measure BIO-12: Obtain Required Permits, Authorizations, Certifications, and Agreements

- Mitigation Measure BIO-13: Compensate for Permanent and Temporary Loss of Open Water Habitat
- Mitigation Measure CR-1: Implement Plan to Address Discovery of Unanticipated Buried Cultural or Paleontological Resources
- Mitigation Measure CR-2: Implement Plan to Address Discovery of Human Remains
- Mitigation Measure GEO-1: Implement Geotechnical Report Recommendations Related to Grading
- Mitigation Measure HAZ-1: Prepare a Risk Assessment Plan
- Mitigation Measure HAZ-2: Control Contamination Resulting from Previously Unidentified Hazardous Waste Materials
- Mitigation Measure HAZ-3: Develop and Implement a Construction Management Plan
- Mitigation Measure HYD-1: Low-Flow Season Construction
- Mitigation Measure HYD-2: Implement Requirements for a Stormwater Pollution Prevention Plan
- Mitigation Measure HYD-3: Identify Additional Construction-Related Best Management Practices in the Construction Plans
- Mitigation Measure HYD-4: Implement Provisions for Dewatering
- Mitigation Measure HYD-5: Monitor Turbidity and Suspended Solids for Installation of Sheet-Pile Cofferdam and Stream Diversion
- Mitigation Measure HYD-6: Implement Other Provisions for Work in Surface Waters
- Mitigation Measure NOI-1: Employ Noise-Reducing Construction Practices

Any future maintenance actions that are not described in this IS/MND may be subject to additional review under CEQA.

Chapter 2
# Project Description

## Introduction

The City of Reedley (City), in cooperation with the California Department of Transportation (Caltrans), proposes to replace the Manning Avenue Bridge (Bridge No. 42C-0010) over the Kings River. The existing bridge is rated structurally deficient and has many other deficiencies as described under the project purpose and need, below. The City of Reedley is also proposing to install new curb, gutter, and meandering sidewalk for approximately 1250 feet along both the north and south sides of Manning Avenue from the east end of the Kings River Bridge to the I Street intersection curb return. The meandering sidewalk would be consistent with other meandering walks recently installed adjacent to the project site, and will improve safety, mobility and the ability to develop adjacent parcels.

The Highway Bridge Program (HBP), formerly the Highway Bridge Replacement and Rehabilitation Program, will provide 88.5% of the right-of-way and construction funding to replace all portions of the existing bridge. The City will provide the remaining 11.5% of the funding. Separate local funding will be used to construct the sidewalk improvements east of the bridge.

The proposed project is on Manning Avenue in the City of Reedley, Fresno County. The project area is approximately 11 miles east of State Route (SR) 99, extending from Kings River Road on the west side of the Kings River to approximately 350 feet from the intersection of Manning Avenue and West Upper Bridge Avenue (see Figure 2-1). The current bridge configuration is 440 feet long by 89 feet 4 inches wide, with spans that range from 40 to 80 feet. It is supported by cast-in-place concrete pierwalls. The project length is approximately 2,610 feet long, including roadway realignments to match the improved bridge and stage construction.

## Background and Existing Conditions

Manning Avenue is a major arterial with an average operating speed of 60 miles per hour (mph) west of the project and an arterial with an operating speed of 45 mph east of the project. The roadway and bridge have two traffic lanes in each

direction (Quincy Engineering 2007) and a raised median. East of the bridge, a sidewalk does not currently exist on the south side of Manning Avenue. A conventional straight sidewalk exists on the north side.

The Kings River flows to the south in the project area, and the developed areas along the river focus on river recreation and riverfront residential uses. In the immediate project area, Kelley's Beach offers river access and camping. To the east of the project area is downtown Reedley. The existing bridge serves as the western gateway to the city.

The existing reinforced concrete T-beam bridge was originally constructed in 1929 but has been subsequently widened twice to the south (downstream). The first widening occurred in 1952 and consisted of constructing several additional reinforced T-beam girders to provide 13 feet 6 inches of additional bridge width. The second widening occurred in 1974 and provided an additional 50 feet 6 inches of bridge width to increase traffic capacity on Manning Avenue, upgrading it from a two- to a four-lane arterial (Quincy Engineering 2007). In 1974, a total of 240 feet of the 1952 portion of the bridge was removed from the west end, resulting in the current bridge length of 440 feet.

Storm drainage is collected along the north side of Manning Avenue and drains into the Kings River. Currently, roadway storm drainage sheet-flows off Manning Avenue to the vacant undeveloped parcel south of the roadway.

# Purpose

The purpose of the proposed project is to replace the structurally deficient Manning Avenue Bridge to improve public safety. The existing bridge is structurally deficient due to the poor deck condition, substandard bridge and approach guardrails, and cracks in the original bridge piers.

The specific purposes of the proposed project are the following:

- improve pedestrian safety by increasing the separation width of pedestrians and vehicles,
- improve bridge performance in the event of the maximum credible earthquake,
- correct substandard superelevation on the west approach,
- improve the aesthetics of the western gateway of the city,
- reduce maintenance costs,
- improve public safety by replacing the structurally deficient bridge,
- improve water recreation by increasing the spans between bridge piers; and
- provide sidewalks to the east of the bridge along both sides of Manning Avenue to blend in more appropriately with the sidewalks just east of the I street intersection.


06540.06 001 Tech Study (5-07)

**Figure 2-1**
**Project Location**

# Need

According to the Feasibility Study (Quincy Engineering 2007) and Supplemental Feasibility Study (Quincy Engineering 2008) prepared by Quincy Engineering, all portions of the existing structure will require replacement. The original 1929 structure and the widened 1952 structure require replacement due to existing deficiencies, while the 1974 portion of the bridge structure requires several rehabilitation measures that are not economically feasible.

## Deficiencies of Existing Bridge

The latest Caltrans maintenance report for the bridge identified damage to the asphalt concrete deck, railing, and piers, and identified scour that is causing the upstream ends of some piers to be exposed and undermined. According to the final supplemental feasibility study prepared for the proposed project (Quincy Engineering 2008), the existing bridge is structurally deficient due to the deteriorating deck condition. The existing bridge rails are substandard, and an approach guardrail is not present, which raises safety concerns (Quincy Engineering 2007). The western approach roadway also has substandard superelevation.

The widened 1974 structure has a different span length and superstructure type and is separated from the widened 1952 structure and the original structure by a 0.5-inch longitudinal expansion joint, which causes these portions of the bridge to act as two separate structures. Consequently, the two structures are evaluated separately.

The underside of all spans in the original 1929 portion and widened 1952 portion have multiple moderate-to-severe cracks and brown leachate, which indicates significant water intrusion and subsequent corrosion of the deck reinforcing steel. There are moderate-to-severe vertical cracks in various locations in all of the original piers. The original piers are supported on timber piles, the current condition of which is unknown.

The 1974 structure is supported on driven piles filled with reinforced concrete. The elevation of the top of the piles for the 1974 structure is about 11 feet below that of the original and 1952 structures, making the older piles more vulnerable to scouring than the 1974 piles. For this reason, it is assumed that rehabilitation and/or retrofit of the original and 1952 structures would not be cost effective and that the proposed project would include their replacement. After further study of the 1974 structure, it is recommended that all portions of the existing structure be replaced.

## Seismic Inadequacies

Any alternative that leaves any portion of the existing bridge structure in place requires an evaluation of the structure for seismic endurance and subsequent retrofitting, as appropriate. This evaluation is included in the Seismic Strategy and Bridge Replacement Report prepared by Cornerstone Structural Engineering Group (2006). A new structure of any configuration would need to be designed to meet the current seismic design criteria specified by Caltrans Bridge Design Specifications (BDS).

# Proposed Project

The proposed project would realign Manning Avenue to the north and, in two stages, construct a new bridge joined with a closure pour (see Figures 2-2a, b, c, and d). Traffic would be shifted south to the 1974 structure while the original 1929 structure and the 1952 structure were removed for construction of the new northern replacement portion. Traffic would then be shifted north onto the newly constructed portion while the existing 1974 structure would be removed. Once the entire existing structure is removed, the second portion of the replacement structure would be constructed and joined to the new north structure with a closure pour. The new structure would be a three-span parabolic haunched, cast-in-place, prestressed concrete box girder. Supports would likely be large-diameter cast-in-drilled-hole (CIDH) or cast-in-steel-shell (CISS) concrete piles at the piers, with pile footings at the abutments. All 10 original concrete pierwall foundations would be removed and replaced with two pier locations within the Kings River channel. See Appendix A for a complete set of preliminary design drawings.

The proposed project would also install new curb, gutter, and meandering sidewalk approximately 1250 feet along both sides of Manning Avenue from the east end of the Kings River Bridge to the I Street intersection curb return. The sidewalk would be 6 feet wide and meander primarily within existing City right-of-way; however some additional right of way will be required. The meandering sidewalk would be consistent with other meandering walks recently installed adjacent to the project site, and would improve safety, mobility and the ability to develop adjacent parcels.

Storm drainage is collected along the north side of Manning Avenue and drains into the Kings River. Currently, roadway storm drainage sheet-flows off Manning Avenue to the vacant undeveloped parcel south of the roadway. The existing drainage pattern will be improved along the south of Manning Avenue because now the water will be collected along the curb and drain towards the river where it will tie into the existing drainage facility.

The advantages of the proposed project include minimal bridge maintenance costs and efforts on the City's part for approximately the next 75 years, avoidance of rehabilitation or retrofit of the existing structures, aesthetic benefits

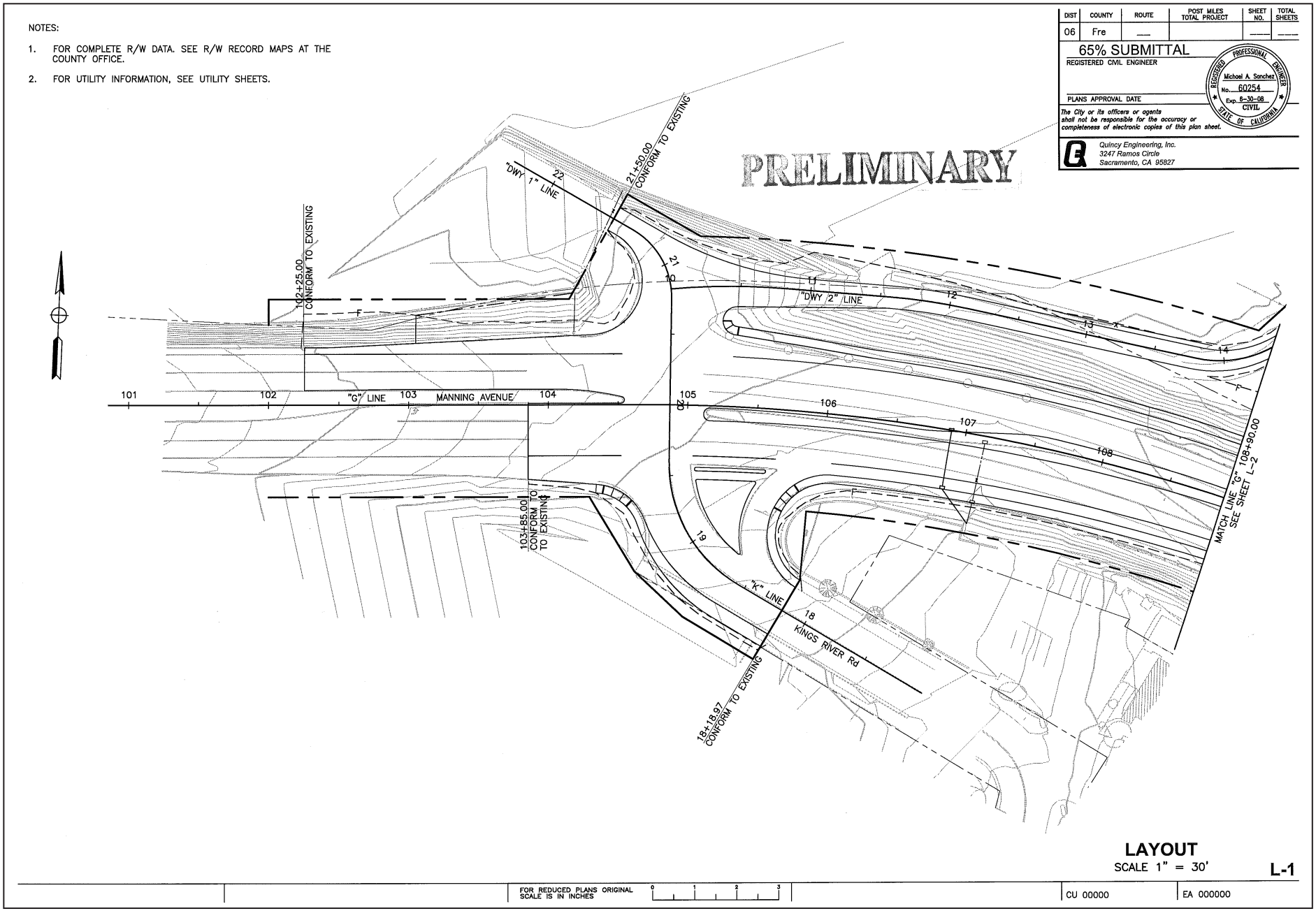



**Figure 2-2a**
**Proposed Project**
**Full Bridge Replacement**

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | -- | | ---- | ---- |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

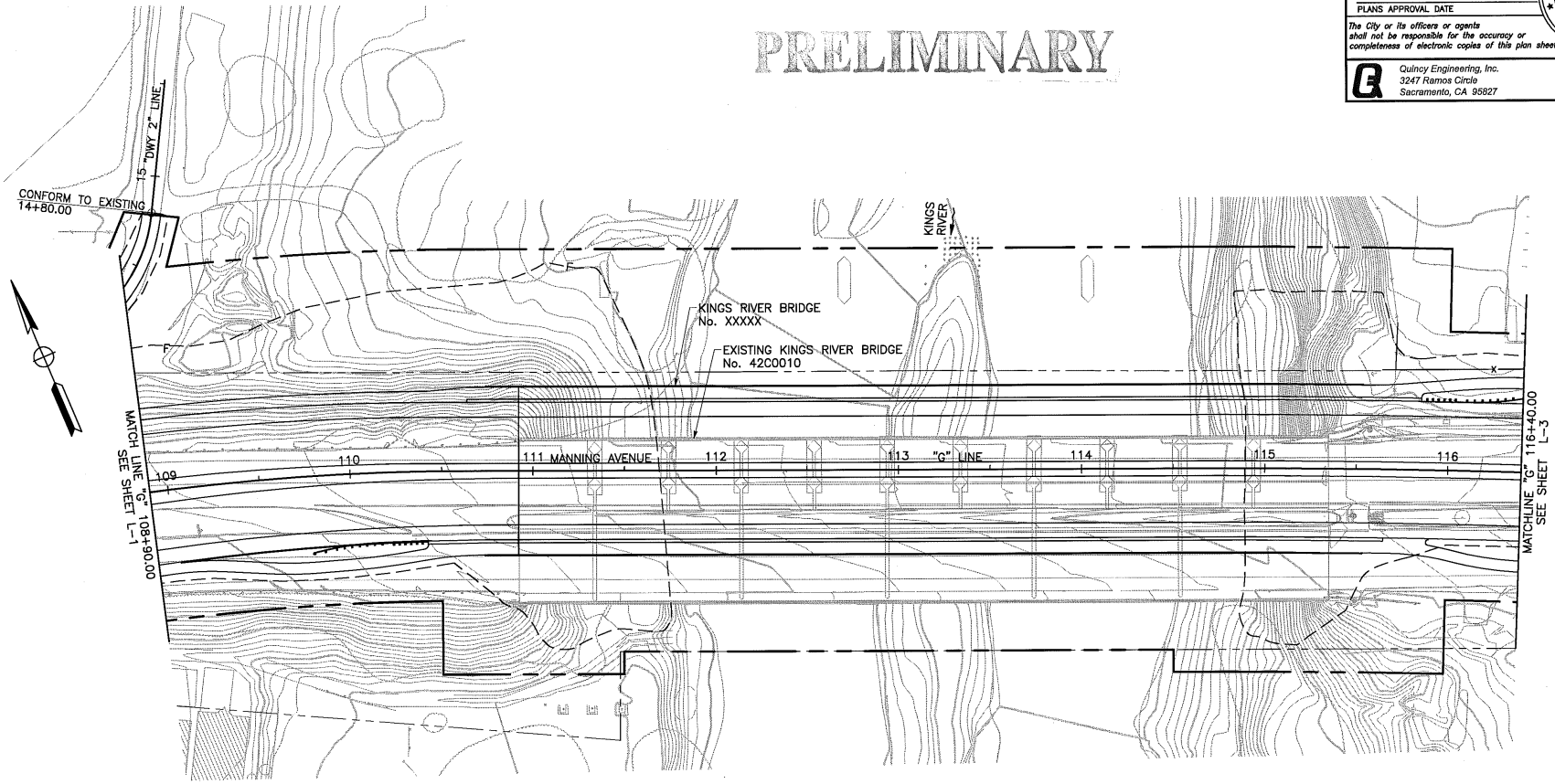
PROFESSIONAL ENGINEER — REGISTERED — Michael A. Sanchez — No. 60254 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




**LAYOUT**
SCALE 1" = 30'

L-2

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 | EA 000000

06540.06 001 (08-07)

**Figure 2-2b**
**Proposed Project**
**Full Bridge Replacement**

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | --- | | ---- | --- |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

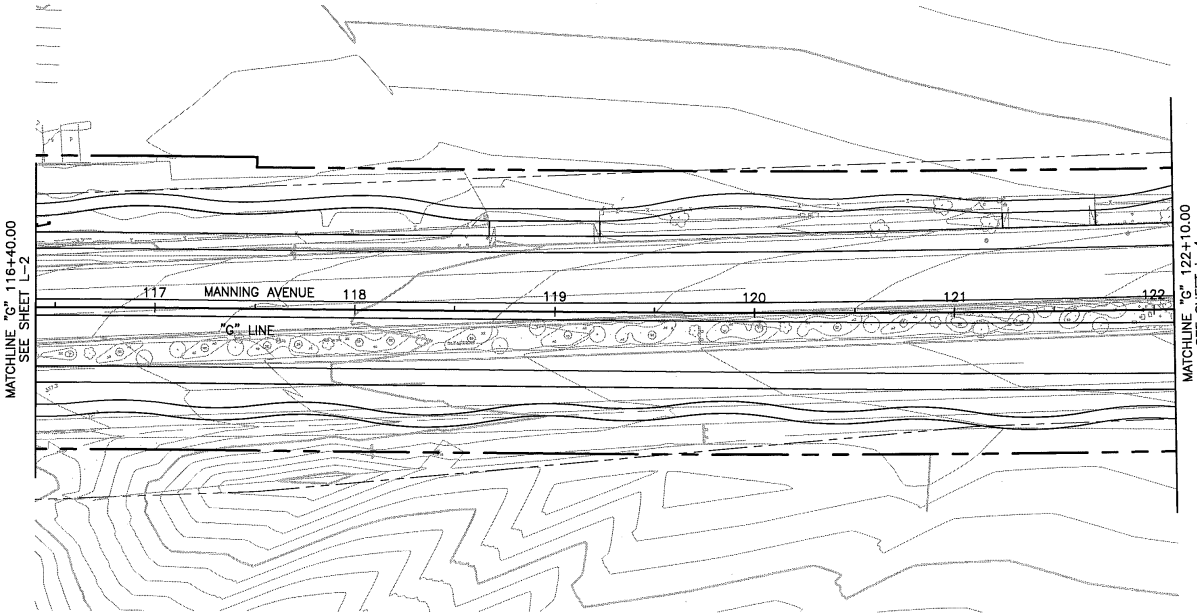
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Michael A. Sanchez — No. 60254 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




**LAYOUT**

SCALE 1" = 30'

L-3

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 | EA 000000

06540.06 001 (08-07)

**Figure 2-2c**
**Proposed Project**
**Full Bridge Replacement**

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | ___ | | ___ | ___ |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

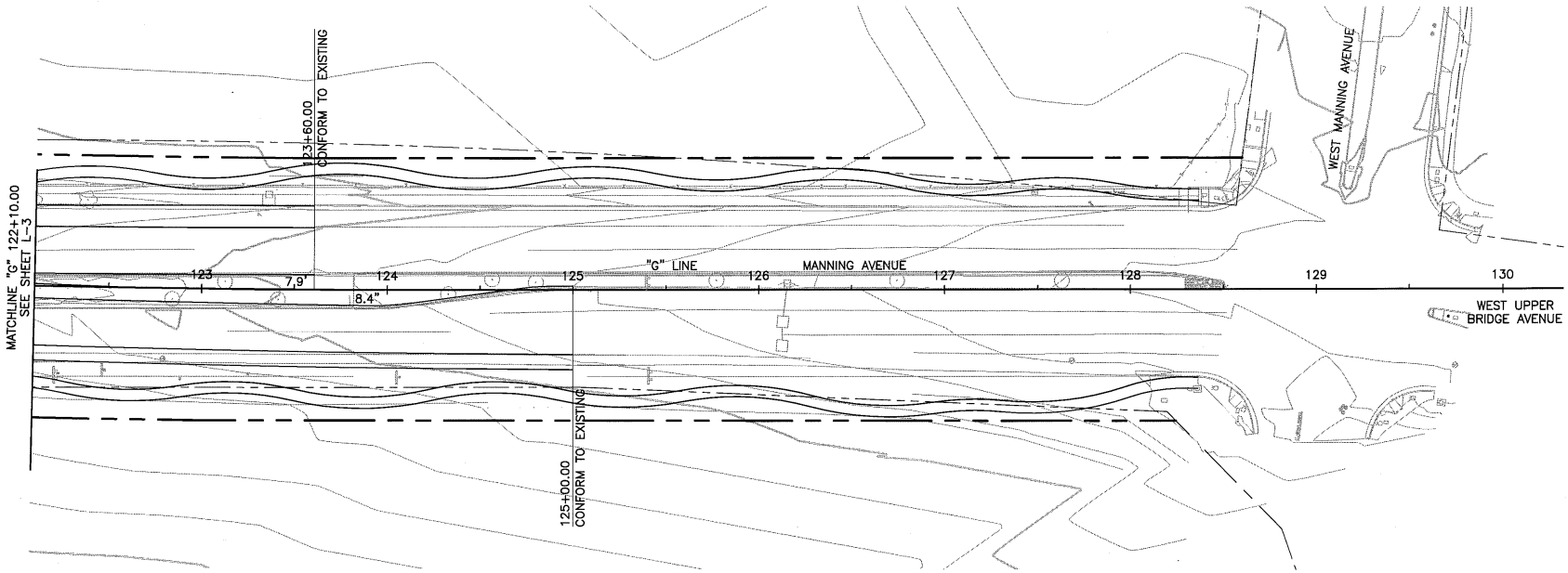
PROFESSIONAL ENGINEER — Michael A. Sanchez — No. 60254 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




## LAYOUT

SCALE 1" = 30'

L-4

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 | EA 000000

06540.06 001 (08-07)

**Figure 2-2d**
**Proposed Project**
**Full Bridge Replacement**

due to removal of all existing foundations, and more open river access for watercraft and recreation due to longer spans and reduced foundations.

# Construction Phasing, Access, Staging, and Methods

## Project Phasing

Construction of the project could span two to three construction seasons. It is anticipated that construction activities would commence in fall of 2009 or 2010 and may conclude in late spring of 2010 or 2011 (the project may result in approximately 20 months of construction, or more). New gutter, curb and meandering sidewalk construction east of the bridge may occur concurrent with, or prior to, bridge replacement activities.

The State Reclamation Board allows construction activities in the Kings River between mid-July and the end of October. However, large discharges from Pine Flat Dam occur during the irrigation months, starting in late April to early May, and generally decline at the beginning of September. Large stormflow discharges also occur during winter. Construction of falsework and substructure is planned for September when discharge is low, and construction of superstructure is expected to proceed in December and end in June (the start of the irrigation season).

Construction would also be timed, as much as possible, to coincide with avoidance windows for nesting swallows and other birds as well as roosting bats. Upland construction efforts would be concentrated between August 1 and March 1, as feasible. Vegetation removal for staging areas and construction work would occur between the middle of August and the end of February, and measures to exclude roosting bats from construction areas would be implemented between mid-February and mid-April.

The bridge replacement would likely be constructed in two major stages. The first stage would require traffic to be realigned south on the existing bridge. This stage would require the closure of one westbound traffic lane, resulting in a total of three traffic lanes (two eastbound and one westbound) with provisions for reversing traffic flow in the middle lane, if needed. The northernmost 40 feet of the existing bridge would be removed while traffic remained on the existing southern portion. A new three-span parabolic haunched, cast-in-place, prestressed concrete box girder bridge would then be constructed to the north of the existing structure. This structure would be approximately 60 feet in total width. This stage is anticipated to take 10 months, or more, to complete.

During the second stage, traffic would be realigned toward the north and would travel over the new bridge structure. During this stage, a total of four traffic lanes would be open (two eastbound and two westbound), resulting in no loss of traffic capacity over the current configuration. All remaining portions of the existing bridge would be removed (approximately 50 feet) while traffic continued to the north. The project would conclude with the construction of a second cast-

in-place, prestressed concrete box girder bridge with a span configuration identical to the new northern structure. The second-stage structure would be approximately 30 feet wide and would be connected to the northern structure with a closure pour. This stage is anticipated to take 10 months, or more, to complete.

## Project Access and Staging Areas

To allow equipment to access the project site, vegetation would be removed within the footprint of the proposed bridge, and temporary access roads would be constructed. Equipment staging would likely occur in the northwest quadrant of the project area because it is the largest flat area adjacent to the project; it also allows for good river access. The staging location may have to shift during the second stage of construction, however. Ideally, staging areas would allow the contractor to access the project site without having to cross lanes of traffic. Should the contractor wish to store equipment to the south of the bridge during the second stage of construction, the contractor may negotiate with the property owner in the southeast quadrant of the project area. This location provides good access to the project area and would result in a lesser impact on Kelly's Beach. These temporary staging areas would be reclaimed to conditions equivalent to existing conditions after project construction has been completed.

## Anticipated Construction Equipment

Typical construction equipment would include the following.

- Backhoes and dump trucks would be used for excavation at the abutments, and lighter equipment would be used for backfill compaction and grading for the new sidewalk.
- For the construction of CIDH and CISS bridge pilings, a 150-ton drilling machine would be used, and the excavated material would be hauled away by dump trucks. A driving hammer attachment would be used as well as baker tanks to store and recirculate slurry. Concrete trucks would be used to place concrete in the drilled holes and for new gutter and sidewalk.
- Bridge falsework could consist of steel piles that would be set by using a pile drive hammer mounted to a crane. Falsework construction typically requires a crane, forklift, and earth-moving equipment (i.e., backhoe or grader).
- Bridge superstructure construction would require the use of cranes and concrete pumps. Superstructure construction would also require construction vehicles to have access to the riverbed.
- Bridge superstructure prestressing would require hydraulic jacks for post-tensioning.

The majority of the construction noise related to this project would occur when the existing bridge is removed and during pile driving. This operation would likely include noise from concrete hammers/breakers and would be likely to

occur during a 4-week period in each stage of construction, for a total of eight weeks.

# Methods

## Bridge Removal

To remove the existing bridge, the bridge deck could be cut with a saw at the piers and longitudinally between the girders. Cranes could then lift the entire girder section out with the composite tributary bridge deck attached. Once the larger girder sections are placed on the ground, they could be hauled off in large segments or broken up on site and removed in several pieces. Once the superstructure is removed, the piers would be broken into pieces with demolition hammers and removed from the site. The existing pile foundations would be removed to 1 foot below the original ground level and remain in place. This method is also anticipated for the existing upstream railroad bridge piers and piles.

## Stream Diversion

It is anticipated that stream diversion through the project site would be required for the project. Fill and culverts may be used to divert the stream around the project site for the installation of new foundations and removal of existing foundations. The contractor may take advantage of the natural island in the middle of the river, simply widening it to install the new foundations. This may be accomplished through the use of temporary gravel barges or stringers that could be placed across the river flow so that equipment could be driven across.

If it is determined that a cofferdam is required for the proposed project, construction would occur upstream of the project (on the north side of bridge). Water could be diverted through the work site using corrugated metal pipes, then discharged downstream.

## Foundation Installation

New bridge supports would consist of large-diameter CIDH concrete piles. There would be approximately three piles per pier, for a total of six foundations within the river channel. These supports would be 8 feet in diameter and approximately 95 feet deep. A large auger would be mounted on a 100- to 150-ton crane, and the pile would be drilled to the tip elevation. A steel rebar cage would then be placed in the hole, which would be filled with concrete. The area of disturbance would be limited to the areas immediately adjacent to the hole.

### Bridge Lighting

Temporary light plants may be installed during construction to allow work to occur at night. Electroliers previously located on the bridge have not functioned since the 1930's and were removed. These fixtures would be replaced by three to four new permanent electroliers on each side of the bridge to light the roadway and sidewalk on the bridge. Electroliers would also be installed along the roadway east of the bridge. For installation and use of both temporary and permanent lighting, city lighting standards and the policies in the Kings River Corridor Specific Plan (Knopf Engineering 1991) would be followed.

### Meandering Sidewalk

The new 6-foot sidewalk would be constructed consistent with other meandering walks recently installed adjacent to the project site. Construction activities would occur within and immediately adjacent to the existing road right-of-way. The existing sidewalk on the north side of Manning Avenue would be removed to construct the new meandering sidewalk. Pedestrian traffic would be redirected during construction.

## Right-of-Way Acquisition

The project would require temporary and permanent acquisition of additional rights-of-way or retaining walls or a combination of both. The exact number of parcels affected and the total area of additional right-of-way would be determined as part of final design.

## No-Build Alternative

Under the No-Build Alternative, necessary improvements and rehabilitation to the Manning Avenue Bridge would not be implemented, thus requiring continued maintenance of the existing structurally deficient and seismically unsound bridge. Increased growth in Reedley would continue to place increased traffic and pedestrian demands on the deficient bridge and substandard shoulders. The substandard superelevation would increase the likelihood of traffic accidents as traffic increased. This, combined with the lack of sidewalks on the bridge, poses safety hazards to users. Given the structurally deficient and seismically unsound status of the existing Manning Avenue Bridge, coupled with its age and scour vulnerabilities, portions of the structure are nearing the end of their service life. Extensive rehabilitation or replacement is required at this time. The No-Build Alternative does not meet the proposed project's purpose and need.

# Permits and Approvals Needed

The permits, reviews, and approvals that would be required for project construction are listed in Table 2-1.

**Table 2-1.** Required Permits, Reviews, and Approvals

| Agency | Permit/Approval | Status |
|---|---|---|
| U.S. Fish and Wildlife Service | Section 7 consultation for threatened and endangered species | Not yet initiated |
| U.S. Army Corps of Engineers | Section 404 authorization for fill of waters of the United States | Not yet initiated |
| California Department of Fish and Game | Section 1602 Streambed Alteration Agreement | Not yet initiated |
| Central Valley Regional Water Quality Control Board | Section 401 water quality certification | Not yet initiated |
| State Reclamation Board | Encroachment permit | Not yet initiated |
| State Lands Commission | Lease of lands of the state | Not yet initiated |

# Public Involvement

The City will provide a Notice of Intent (NOI) to adopt the MND pursuant to CEQA Guidelines Section 15072, and this IS/MND will be circulated for a 30-day public and agency review as required by the State CEQA Guidelines. The City Council will hold a public meeting to consider the project, the environmental documentation, and all public and agency comments. The City Council will adopt findings concerning all environmental issues raised by the public and trustee and responsible agencies.

During the review period, written comments may be submitted to:

City of Reedley
Department of Public Works/Engineering
Attention: Dana Ritschel
1733 Ninth Street
Reedley, CA 93654

Chapter 3
# Environmental Checklist

| | |
|---|---|
| **1. Project Title:** | Manning Avenue Bridge Replacement Project |
| **2. Lead Agency Name and Address:** | City of Reedley, DPW/Engineering<br>1733 Ninth Street<br>Reedley, CA 93654 |
| **3. Contact Person and Phone Number:** | Dana Ritschel<br>(559) 637-4200, Ext. 277 |
| **4. Project Location:** | Manning Avenue in the City of Reedley, Fresno County, approximately 11 miles east of State Route 99 and extending from Kings River Road on the west side of the Kings River to approximately 300 feet from the intersection of Manning Avenue and West Upper Bridge Avenue. |
| **5. Project Sponsor's Name and Address:** | City of Reedley, DPW/Engineering<br>1733 Ninth Street<br>Reedley, CA 93654 |
| **6. General Plan Designation:** | Open Space, Central Commercial, Limited Industrial, Recreation |
| **7. Zoning:** | Resource, Conservation and Open Space (RCO), Central and Community Commercial (Office and Retail Zone [CC]), and Light Industrial (Limited Industrial Uses) combined with PUD (Planned Unit Development Combining District) (ML-P). |

8. **Description of Project:** The project would replace the structurally deficient Manning Avenue Bridge over the Kings River to improve public safety. Chapter 2 contains a complete description of the project.

9. **Surrounding Land Uses and Setting:** The primary land uses in the project area are recreation and open space and the Kings River (riparian).

10. **Other Public Agencies Whose Approval Is Required:** See *Required Permits and Approvals* in Chapter 2.

## Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agricultural Resources | ☐ Air Quality |
| ☐ Biological Resources | ☐ Cultural Resources | ☐ Geology/Soils |
| ☐ Hazards and Hazardous Materials | ☐ Hydrology/Water Quality | ☐ Land Use/Planning |
| ☐ Mineral Resources | ☐ Noise | ☐ Population/Housing |
| ☐ Public Services | ☐ Recreation | ☐ Transportation/Traffic |
| ☐ Utilities/Service Systems | ☐ Mandatory Findings of Significance | |

## Determination:

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION would be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

| | |
|---|---|
| Signature | May 28, 2009<br>Date |
| David Brletic<br>Printed Name | City of Reedley<br>For |

**Evaluation of Environmental Impacts:**

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an environmental impact report (EIR) is required.
4. "Negative Declaration: Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less-than-Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level.
5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063[c][3][D]). In this case, a brief discussion should identify the following:
   (a) Earlier Analysis Used. Identify and state where earlier analyses are available for review.
   (b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
   (a) The significance criteria or threshold, if any, used to evaluate each question; and
   (b) The mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **Ia.** | **LIGHT AND GLARE.** The Thresholds of Significance adopted by the City (2000a) state that the following conditions will normally be considered potentially significant: | | | | |
| 1. | Any light source (lamp or lighting element) in excess of 150 watts which directly illuminates or is visible from adjacent properties | ❑ | ❑ | ■ | ❑ |
| 2. | Indirect illumination of adjacent properties in excess of 0.5 foot candles; for natural areas which are designated as riparian areas, habitat areas, or other similar designation as per the Kings River Corridor Specific Plan, the thresholds shall be 0.25 foot candles, recognizing the phototropic nature of wildlife. | ❑ | ❑ | ■ | ❑ |
| 3. | For pedestrian lighting systems, a point of overlap between light patterns greater than seven feet. | ❑ | ❑ | ❑ | ■ |
| 4. | Intensity lighting within the physical limits of an area required to be lighted that is greater than seven foot candles. | ❑ | ❑ | ■ | ❑ |
| 5. | Light levels that are attractive to vectors such as birds or rodents. | ❑ | ❑ | ■ | ❑ |
| **Ib.** | **VISUAL RESOURCES.** The Thresholds of Significance adopted by the City state that a project will normally be considered significant if it: | | | | |
| 1. | Results in the obstruction of federal, state or locally classified scenic areas, historic properties, community landmarks, or formally classified scenic resources such as a scenic highway, national scenic area, or state scenic area. | ❑ | ❑ | ❑ | ■ |
| 2. | Results in the development of structures in hills or mountains that are visible above the crest of the mountain. | ❑ | ❑ | ❑ | ■ |
| 3. | Visibility of the project by those using recreational open space intended for passive natural or educational use. | ❑ | ❑ | ■ | ❑ |
| 4. | Provides less than 50% tree shading (at full tree maturity) in commercial, industrial and institutional parking lots. | ❑ | ❑ | ❑ | ■ |

# Setting

The City of Reedley General Plan (General Plan) (City of Reedley 1993a) prioritizes the scenic preservation of riverfronts in the City. Policy 503-03 of the Open Space and Conservation Element strives to "foster and maintain the scenic atmosphere of the riverfront area." And, the intent of Policy 503-13 of the same element is to "continue to implement provisions of the Kings River Corridor Specific Plan to ensure conservation of the riparian area."

The Kings River Corridor Specific Plan was prepared to preserve and enhance the environment along the Kings River that runs through Reedley (Knopf Engineering 1991). Aesthetics Goal 1 of the plan is to "provide opportunities to visually appreciate the scenic resources in the Planning Area." Aesthetics Policy 1.1 seeks to "establish scenic resources at appropriate sites along the Kings River."

At this time there are no specifically established scenic resources designated by the City in the project area. There are no officially designated scenic vistas, scenic resources, or designated state scenic highways (California Department of Transportation 2007) in the project area.

City of Reedley Municipal Code (City of Reedley 2006) includes the following required finding regarding lighting:

> Chapter 19: Site Plan Review
>
> 10-19-7: Required Findings
>
> C. Proposed lighting is so arranged as to deflect the light away from adjoining properties.

The existing visual setting of the project area includes the area beneath the Manning Avenue Bridge over the Kings River, and the top of the bridge on Manning Avenue that is accessible for automobile traffic, as described below.

The visual character below the bridge is defined by the relatively natural setting of the Kings River corridor. Prominent visual features are large shrubs and trees, the watercourse and its sandy banks, and the existing piers and understructure of the Manning Avenue Bridge. Dominant colors are the greens and browns of the vegetation and other natural features such as boulders and driftwood. There are very limited long-range views because the banks of the river and tall vegetation rise up from the water's edge, blocking distant views. The waterway is at a lower elevation than Manning Avenue and King's River Road.

The visual setting on top of the bridge is defined as seen from a quickly moving vehicle. Traveling eastbound, the setting is characterized by an elevated view of the Kings River waterway and vegetation to the south, mature orchards, vacant land, and commercial structures within view to the east. Traveling westbound,

the setting is characterized by an elevated view of the Kings River waterway, vegetation, and a defunct railroad bridge over the Kings River, parallel to the Manning Avenue Bridge, to the north. Cultivated fields and farming structures can be seen in the middle ground and distance to the west.

Parcels adjacent to the Manning Avenue Bridge include Kelly's Beach on the King's River Resort, the Edgewater Inn, residences, orchards, vacant land, and commercial structures. Kelly's Beach on the King's River Resort is centered on the Kings River beach/banks, and includes a lawn along the river's edge, picnic tables and barbeque pits, a restaurant and store, Recreational Vehicle (RV) camping spots, and bathrooms. The project site is in direct view from the Kelly's Beach area. The project site is not within direct view from the adjacent Edgewater Inn, residences, or commercial businesses.

# Impact Evaluation

## Light and Glare

1, 4. **Less than significant**. Temporary lighting would be used to illuminate construction areas if night work is needed. This lighting would be focused on specific construction areas and would not be directed toward adjacent properties. While the temporary lighting may be visible from Kelly's Beach, the use would be during limited periods of construction and would cease once the bridge is completed.

Three to four permanent electroliers would be installed on each side of the bridge to illuminate the roadway and sidewalk. Electroliers would also be installed along the roadway east of the bridge. The design of the new lighting would comply with the Kings River Corridor Specific Plan (Knopf Engineering 1991) as well as Chapter 19: Site Plan Review of the City of Reedley municipal code, which specifies that the City is required to find under 10-19-7 C that a project's "proposed lighting is so arranged as to deflect the light away from adjoining properties" (City of Reedley 2006).

2, 5. **Less than significant**. The proposed permanent new lighting would be directed to illuminate the roadway, but light from the new fixtures has the potential to indirectly illuminate the Kings River riparian area adjacent to the roadway. The new lighting would be designed to comply with City standards and thresholds, and would not be of an intensity to attract rodents, birds, or other vectors. Due to the height of the bridge in relation to the riparian habitat and the necessary fixture design required to deflect light away from adjoining properties, the proposed project is not anticipated to indirectly illuminate the riparian areas in excess of 0.25 foot candles.

3. **No impact**. The proposed permanent new lighting would be designed to comply with the roadway and pedestrian lighting standards of the City.

## Visual Resources

1. **No impact**. There are no specifically established scenic resources designated by the City in the project area. There are no officially designated scenic vistas, scenic resources, or designated state scenic highways (California Department of Transportation 2007) in the project area.

2. **No impact**. The proposed project does not include development of structures in hills or mountains.

3. **Less than significant**. During and after construction, the proposed project would be visible from Kelly's Beach, from recreational users on or adjacent to the Kings River and from drivers and pedestrians on Manning Avenue. Temporary use of construction signage, construction vehicles and equipment, lane closures, and other construction-related activities would change the existing visual character of the project area during construction. Construction equipment used during project construction on the bridge, beneath the bridge, and in adjacent staging areas could affect the scenic quality of the riverfront. However, the placement of construction equipment in the viewshed would be short-term and temporary and thus less than significant.

   The new bridge would be wider than the existing structure to comply with current roadway and pedestrian safety design standards. Construction of the replacement bridge structure would require the removal of landscaping vegetation adjacent to the existing roadway as well as a limited number of riparian shrubs and trees directly under or immediately adjacent to the proposed structure. New landscaping to stabilize slopes would be installed following bridge construction.

   Construction would also remove the existing bridge foundations. The new bridge design would require fewer new foundations, allowing more open river access for watercraft and recreation.

   One of the purposes of the proposed project is to improve the aesthetics of the western gateway of the city. The proposed project does not involve major changes to the views of the bridge or recreational areas and would enhance the appearance of the bridge from the roadway, Kings River, and Kelly's Beach.

4. **No impact**. The proposed project does not include construction of a parking lot.

# Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in significant impacts on light and glare or visual resources.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **II.** | **AGRICULTURAL RESOURCES.** The General Plan designates certain lands within the City's Sphere of Influence for agricultural uses. Other lands in the Sphere are in interim agricultural use but are anticipated to be developed with urban land uses pursuant to future specific plans. The Thresholds of Significance adopted by the City state that a project will normally be considered significant if it: | | | | |
| 1. | Is intensively farmed, or can be farmed, on a commercially feasible scale, as that term is defined in Section 66474.4 of the Government Code; and, | ❑ | ❑ | ❑ | ■ |
| 2. | It is not substantially surrounded by non-agricultural uses, including urban and rural density residential and commercial uses; or, | ❑ | ❑ | ❑ | ■ |
| 3. | Meets the size and standards established in Section 66474.4 of the Government Code; or, | ❑ | ❑ | ❑ | ■ |
| 4. | Is under Williamson Act contract agricultural conservation easement or other such restriction; or, | ❑ | ❑ | ❑ | ■ |
| 5. | Is considered prime farmlands or farmlands of importance by State or Federal Agencies. | ❑ | ❑ | ■ | ❑ |

# Setting

The project area includes the existing Manning Avenue Bridge, part of Manning Avenue, and parts of the Kings River channel beneath the bridge. Land to the north of Manning Avenue, west of the Kings River, is in orchard and other farming production. Land south of Manning Avenue and east of the Kings River is also in agricultural production. This area includes soils classified as Prime, Unique and Locally Important Farmland (California Department of Conservation 2009).

# Impact Evaluation

1-5. **Less-than-significant.** The General Plan (City of Reedley 1993) designates the land uses in the project area as Resource, Conservation and Open Space (RCO), Central and Community Commercial (Office and Retail Zone [CC]), and Light Industrial (Limited Industrial Uses) combined with PUD (Planned Unit Development Combining District) (ML-P). The project area is not subject to a Williamson Act contract. The land south of Manning Avenue, east of the Kings River, is in agricultural production. Construction of the meandering sidewalk on the south side of the roadway may occur outside of the existing road right-of-way on land identified by the California Department of Conservation as Prime and Locally important farmland (California Department of Conservation 2009). However, the land that would be paved by the sidewalk is at the northern outer edge of the area in agricultural production, not land in actual agricultural production. And, as part of the General Plan update and General Plan environmental impact report process in 1993, the City concluded that the loss of farmland was a significant and irreversible consequence of the proposed land use changes, adopted a Statement of Overriding Considerations and approved the General Plan update. The proposed project is consistent with the General Plan. The impacts caused by the new sidewalk would occur in a very small area along the edge of the roadway. No impacts to agricultural resources beyond those described for the General Plan would occur as a result of the proposed project.

# Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in significant impacts on agricultural resources.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **III.** | **AIR QUALITY.** The Thresholds of Significance adopted by the City state that a project's individual or cumulative effect will normally be considered potentially significant if: | | | | |
| 1. | Emissions exceed levels set forth in New and Modified Source Review Rule. | ❑ | ❑ | ❑ | ■ |
| 2. | Emissions exceed 55 pounds per day of NOx or Reactive Organic Compounds from motor vehicle trips (indirect sources only). | ❑ | ❑ | ■ | ❑ |
| 3. | It will cause or contribute to an increase in the number of exceedance events of any California or national Ambient Air Quality Standard. | ❑ | ❑ | ■ | ❑ |
| 4. | Emissions are in excess of those established by the San Joaquin Air Pollution Control District's Guide for Assessing and Mitigating Air Quality Impacts. | ❑ | ■ | ❑ | ❑ |
| 5. | Increase in the concentration of pollutants in existing natural areas, areas planned for habitat conservation and development, or existing riparian areas. | ❑ | ❑ | ■ | ❑ |
| 6. | Increase in local Carbon Monoxide "hot spots." | ❑ | ❑ | ❑ | ■ |

The following air quality setting discussion and impact evaluation is summarized from the Air Quality Technical Report prepared for the proposed project (City of Reedley 2008a).

# Setting

The proposed project is located in the City of Reedley, in Fresno County, California. Manning Avenue is a prominent roadway that utilizes the Manning Avenue Bridge as the roadway crosses Kings River. The proposed project is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which is in the greater San Joaquin Valley Air Basin. The mountain ranges bordering the air basin near the proposed project site (the Coast Ranges to the west and Sierra Nevada to the east) influence wind directions and speeds and atmospheric inversion layers in the San Joaquin Valley. These mountain ranges channel winds through the valley, affecting both the climate and dispersion of air pollutants.

## Criteria Pollutants

The federal and state governments have established ambient air quality standards for the following six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide ($NO_2$), (sulfur dioxide ($SO_2$), particulate matter (particulate matter smaller than 10 microns or less in diameter [PM10] and particulate matter smaller than 2.5 microns or less in diameter [PM2.5]), and lead. Ozone, $NO_2$, and particulate matter generally are considered to be "regional" pollutants, as these pollutants or their precursors affect air quality on a regional scale. Pollutants such as CO, $SO_2$, lead, and particulate matter are considered to be local pollutants that tend to accumulate in the air locally. Particulate matter is considered to be a localized pollutant as well as a regional pollutant. In the area where the proposed project site is located, PM10, PM2.5, and ozone are of particular concern. Toxic air contaminants (TACs) are discussed below also, although no state or federal ambient air quality standards exist for these pollutants. Brief descriptions of these pollutants are provided below, and a complete summary of California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) is provided in Table 3-1.

### Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials. Ozone is a severe eye, nose, and throat irritant. Ozone also attacks synthetic rubber, textiles, plants, and other materials. Ozone causes extensive damage to plants by leaf discoloration and cell damage.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors—ROG and $NO_x$—react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. The ozone precursors, ROG and $NO_x$, are mainly emitted by mobile sources and by stationary combustion equipment.

### Carbon Monoxide

Carbon monoxide is essentially inert to plants and materials but can have significant effects on human health. Carbon monoxide is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. Carbon monoxide can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

### Inhalable Particulates

Inhalable particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials. Particulate emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

### Toxic Air Contaminants

Toxic Air Contaminants are pollutants that may be expected to result in an increase in mortality or serious illness or that may pose a present or potential hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. Although ambient air quality standards exist for criteria pollutants, no standards exist for TACs.

Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (ARB) consistently has found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a hazard index is used to evaluate risk. In the early 1980s, the ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The TAC of most concern with regard to the proposed project is diesel exhaust particulate matter, which was identified by the ARB as a TAC in October 2000.

# Affected Environment

## Monitoring Data

The existing air quality conditions in Fresno County (County) can be characterized by data collected at the N. First Street, Fresno, CA monitoring station. Air quality monitoring data from this station is summarized in Table 3-2. These data represent air quality monitoring data for the last three years for which complete data are available (2005 to 2007).

Based on data from this station, Table 3-2 shows the number of days the County exceeded the State and Federal standards for ozone, CO, $NO_2$, and PM10 between 2005 and 2007. As indicated in Table 3-2, the station has experienced

**Table 3-1.** Ambient Air Quality Standards Applicable in California

| Pollutant | Symbol | Average Time | Standard (parts per million) | | Standard (micrograms per cubic meter) | | Violation Criteria | |
|---|---|---|---|---|---|---|---|---|
| | | | California | National | California | National | California | National |
| Ozone* | $O_3$ | 1 hour | 0.09 | NA | 180 | NA | If exceeded | NA |
| | | 8 hours | 0.070 | 0.075 | 137 | 147 | If exceeded | If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area |
| Carbon monoxide | CO | 8 hours | 9.0 | 9 | 10,000 | 10,000 | If exceeded | If exceeded on more than 1 day per year |
| | | 1 hour | 20 | 35 | 23,000 | 40,000 | If exceeded | If exceeded on more than 1 day per year |
| (Lake Tahoe only) | | 8 hours | 6 | NA | 7,000 | NA | If equaled or exceeded | NA |
| Nitrogen dioxide | $NO_2$ | Annual average | 0.030 | 0.053 | 57 | 100 | If exceeded | If exceeded on more than 1 day per year |
| | | 1 hour | 0.18 | NA | 339 | NA | If exceeded | NA |
| Sulfur dioxide | $SO_2$ | Annual average | NA | 0.030 | NA | 80 | NA | If exceeded |
| | | 24 hours | 0.04 | 0.14 | 105 | 365 | If exceeded | If exceeded on more than 1 day per year |
| | | 1 hour | 0.25 | NA | 655 | NA | If exceeded | NA |
| Hydrogen sulfide | $H_2S$ | 1 hour | 0.03 | NA | 42 | NA | If equaled or exceeded | NA |
| Vinyl chloride | $C_2H_3Cl$ | 24 hours | 0.01 | NA | 26 | NA | If equaled or exceeded | NA |
| Inhalable particulate matter | PM10 | Annual arithmetic mean | NA | NA | 20 | NA | NA | NA |
| | | 24 hours | NA | NA | 50 | 150 | If exceeded | If exceeded on more than 1 day per year |
| | PM2.5 | Annual arithmetic mean | NA | NA | 12 | 15 | NA | If 3-year average from single or multiple community-oriented monitors is exceeded |
| | | 24 hours | NA | NA | NA | 35 | NA | If 3-year average of 98$^{th}$ percentile at each population-oriented monitor within an area is exceeded |
| Sulfate particles | $SO_4$ | 24 hours | NA | NA | 25 | NA | If equaled or exceeded | NA |
| Lead particles | Pb | Calendar quarter | NA | NA | NA | 1.5 | NA | If exceeded no more than 1 day per year |
| | | 30-day average | NA | NA | 1.5 | NA | If equaled or exceeded | NA |

Source: California Air Resources Board 2008a.

Notes: All standards are based on measurements at 25ºC and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable.

* The U.S. Environmental Protection Agency recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. EPA issued a final rule that revoked the 1-hour standard on June 15, 2005. However, the California 1-hour ozone standard will remain in effect.

**Table 3-2.** Ambient Air Quality Monitoring Data Measured at the Fresno First Street Monitoring Station

| Pollutant Standards | 2005 | 2006 | 2007 |
|---|---|---|---|
| **Ozone** | | | |
| Maximum 1-hour concentration (ppm) | 0.134 | 0.138 | 0.109 |
| Maximum 8-hour concentration (ppm) | 0.112 | 0.113 | 0.092 |
| Number of days standard exceeded[a] | | | |
| CAAQS 1-hour (>0.09 ppm) | 31 | 45 | 14 |
| NAAQS 8-hour (>0.08 ppm) | 27 | 38 | 13 |
| **Carbon Monoxide (CO)** | | | |
| Maximum 8-hour concentration (ppm) | 2.95 | 3.20 | 2.60 |
| Maximum 1-hour concentration (ppm) | 2.8 | 4.0 | 4.4 |
| Number of days standard exceeded[a] | | | |
| NAAQS 8-hour (≥9.0 ppm) | 0 | 0 | 0 |
| CAAQS 8-hour (≥9.0 ppm) | 0 | 0 | 0 |
| NAAQS 1-hour (≥35 ppm) | 0 | 0 | 0 |
| CAAQS 1-hour (≥20 ppm) | 0 | 0 | 0 |
| **Particulate Matter (PM10)**[b] | | | |
| National[c] maximum 24-hour concentration (μg/m$^3$) | 106.0 | 117.0 | 107.0 |
| National[c] second-highest 24-hour concentration (μg/m$^3$) | 87.0 | 99.0 | 89.0 |
| State[d] maximum 24-hour concentration (μg/m$^3$) | 103.0 | 122.0 | 102.0 |
| State[d] second-highest 24-hour concentration (μg/m$^3$) | 90.0 | 102.0 | 91.0 |
| National annual average concentration (μg/m$^3$) | 32.6 | 37.7 | 32.0 |
| State annual average concentration (μg/m$^3$)[e] | 32.9 | 38.2 | 32.5 |
| Number of days standard exceeded[a] | | | |
| NAAQS 24-hour (>150 μg/m$^3$)[f] | 0 | 0.0 | 0.0 |
| CAAQS 24-hour (>50 μg/m$^3$)[f] | 58.1 | 79.6 | 54.0 |
| **Particulate Matter (PM2.5)** | | | |
| National[c] maximum 24-hour concentration (μg/m$^3$) | 86.0 | 71.0 | 104.0 |
| National[c] second-highest 24-hour concentration (μg/m$^3$) | 78.0 | 58.0 | 80.5 |
| State[d] maximum 24-hour concentration (μg/m$^3$) | 86.0 | 88.1 | 104.0 |
| State[d] second-highest 24-hour concentration (μg/m$^3$) | 78.0 | 72.4 | 81.4 |
| National annual average concentration (μg/m$^3$) | 16.7 | 16.8 | 18.8 |
| State annual average concentration (μg/m$^3$)[e] | 19.7 | 21.2 | 22.3 |
| Number of days standard exceeded[a] | | | |
| NAAQS 24-hour (>65 μg/m$^3$) | 10.1 | 1.0 | 11.3 |

Sources: California Air Resources Board 2007; U.S. Environmental Protection Agency 2007.

Notes: CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
– = insufficient data available to determine the value.
ppm = parts per million.
μg/m$^3$ = micrograms per cubic meter.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, State statistics are based on California approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

numerous violations of the federal 8-hour ozone standard, no violations of federal and state CO standards, and no violations of the national PM10 standard during the last three years for which complete data are available. Table 3-2 also indicates that the state 24-hour PM10 standard was exceeded 191.7 times during the monitoring period. The national standard for PM2.5 was exceeded 22.4 times between 2005 and 2007.

### Attainment Status

If monitored pollutant concentrations meet state or federal standards over a designated period of time, the area is classified as being in *attainment* for that pollutant. If monitored pollutant concentrations violate the standards, the area is considered a *nonattainment* area for that pollutant. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated unclassified.

The State of California has classified the San Joaquin Valley Air Basin (SJVAB) as being in severe nonattainment for ozone and in nonattainment for PM10. The SJVAPCD has adopted an air quality improvement plan that addresses oxides of nitrogen ($NO_x$) and reactive organic gases (ROG), both of which are ozone precursors and contribute to the secondary formation of PM10 and PM2.5. The plan specifies that regional air quality standards for ozone and PM10 concentrations can be met through the use of additional source controls and trip reduction strategies. It also establishes emission budgets for transportation and stationary sources. Those budgets, developed through air quality modeling, reveal how much air pollution can occur in an area before national ambient air quality standards are violated.

## Sensitive Land Uses

The SJVAPCD generally defines a sensitive receptor as a facility that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants, and there is reasonable expectation of continuous human exposure according to the averaging period for ambient air quality standards (e.g., 24-hour, 8-hour, 1-hour). Within the project area, land uses are primarily commercial. However nearby sensitive receptors include the Edgewater Inn hotel, Kelly's Beach campground/picnic area, and Reedley College.

## Approach and Methodology

This section discusses the approach and methodology used to assess impacts of the proposed project on air quality; thresholds used to determine whether an impact would be significant; discussions of individual impacts relative to the thresholds; mitigation measures to minimize, avoid, rectify, reduce, eliminate, or

compensate for significant impacts; and overall significance of the impact with mitigation incorporated.

## Construction-Related Emissions

A review of the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* indicates that the SJVAPCD considers PM10 to be the primary pollutant of concern from construction activities. The amount of PM10 emitted during construction activities varies greatly depending on the level of activity, the specific operations taking place, the equipment being operated, soil characteristics, and weather conditions. Despite this variability in emissions, experience has shown that several feasible control measures can be reasonably implemented to reduce PM10 emissions during construction.

Short-term impacts result from the following construction-related sources: (1) demolition equipment emissions, (2) dust from building operations, and (3) emissions from workers' vehicles traveling to and from construction sites.

## Operation-Related Emissions

Because there will be no capacity increase, no additional trips or delays are expected to result from the proposed project.

# Thresholds of Significance

CEQA Guidelines Section 15064.7(a) encourages public agencies to develop and publish thresholds of significance that they can use to consistently evaluate potential environmental effects resulting from development. The City established Thresholds of Significance in June, 2000.

The CEQA Guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to determine impacts. The SJVAPCD has specified significance thresholds within its *Guide for Assessing and Mitigating Air Quality Impacts* (San Joaquin Valley Air Pollution Control District 2002) to determine air quality impacts for projects located within the SJVAB.

The SJVAPCD has determined that compliance with its Regulation VIII Fugitive PM10 Prohibitions, including implementation of all feasible control measures specified in its *Guide for Assessing And Mitigating Air Quality Impacts*, is sufficient mitigation to minimize adverse air quality effects from construction-related PM10 emissions to less-than-significant levels (San Joaquin Valley Air Pollution Control District 2002). Since the publication of the SJVAPCD's guidance manual, the SJVAPCD has revised various rules comprising Regulation VIII. Guidance from SJVAPCD staff indicates that implementation of a dust

control plan would satisfy all of the requirements of SJVAPCD Regulation VIII (Cadrett pers. comm.). Further consultation with SJVAPCD staff indicates that, though explicit thresholds for construction-related emissions of ozone precursors are not enumerated in the *Guide for Assessing and Mitigating Air Quality Impacts*, the SJVAPCD considers a significant impact to occur when construction emissions of ROG or $NO_x$ exceed 10 tons per year (Barber pers. comm.).

On December 15, 2005, the SJVAPCD adopted Rule 9510—Indirect Source Review (ISR). This rule fulfills the SJVAPCD's emission reduction commitments in the PM10 and Ozone Attainment Plans through emission reductions from the construction and use of development projects through design features and onsite measures. Rule 9510 requires the implementation of control measures or the purchasing of emissions offsets to mitigate construction-related $NO_x$ and PM10 emissions from roadway projects in excess of 2.0 tons. Compliance with Rule 9510 is separate from the CEQA process, though the control measures used to comply with Rule 9510 may be used to mitigate CEQA impacts (Barber pers. comm.).

In addition, the project applicant may enter into a development mitigation contract (also known as an air quality mitigation agreement) with the SJVAPCD to reduce project emissions to a less-than-significant level (Barber pers. comm.). With this contract, the project applicant may enter into a voluntary agreement with the SJVAPCD to mitigate/reduce project emissions beyond the requirements of Rule 9510, through the payment of fees (on a per-ton basis) to the SJVAPCD. If the fees purchased through the development mitigation contract are sufficient to offset project-related emissions to below the SJVAPCD's thresholds, then project emissions would be considered less than significant (Barber pers. comm.).

Referenced in the City's adopted Air Quality Threshold of Significance number 4, the SJVAPCD's thresholds used to determine project significance are summarized below. The proposed project would potentially result in a significant impact on air quality if it would:

- expose sensitive receptors to substantial pollutant concentrations;
- produce greater than 10 tons/year of ROG;
- produce greater than 10 tons/year of $NO_x$;
- exceed NAAQS or CAAQS for CO (9 ppm 8-hour average; 20 ppm 1-hour average); or
- not comply with the SJVAPCD's Regulation VIII regarding particulate matter emissions from construction activities. Compliance with SJVAPCD Regulation VIII and the local zoning code will reduce particulate emission impacts to levels that are considered less than significant by the SJVAPCD.

# Impact Evaluation

1. **No impact**. On May 8, 2008, the EPA issued final rules governing the implementation of the New Source Review program for PM2.5. This rule applies to facilities that are major emitters of PM2.5 (i.e., 100 or more tons per year). It does not apply to the proposed project.

2. **Less than significant**. As stated above, the proposed project would not have a meaningful impact on traffic volume or vehicle mix. Construction equipment would not be considered "motor vehicle trips." Because construction activities would be temporary and because significant emissions from motor vehicle trips would not result from the proposed project, this impact is considered less than significant. No mitigation is required.

3. **Less than significant**. As described above, the proposed project would not create a significant construction air quality impact. Therefore, the project would not cause an increase in the number of exceedance events of any California or national Ambient Air Quality Standards.

4. **Less than significant with mitigation**. Construction emissions were estimated using the URBEMIS2002 model based on construction data provided in the project description. Construction emissions would not exceed the SJVAPCD thresholds of 10 tons per year of ROG or $NO_x$.

   In addition, compliance with Regulation VIII through implementation of a Dust Control Plan would be sufficient to reduce any potentially significant air quality effects generated by construction-related emissions of PM10. Implementation of Mitigation Measures AQ-1 and AQ-2 would ensure this potentially significant impact is reduced to less-than-significant levels.

5. **Less than significant**. Concentrations of pollutants would not result from project operation. Because the project emissions are construction-related and therefore temporary, this impact is considered less than significant.

**6.** **No impact.** CO hot-spots, areas where CO is concentrated, typically occur near congested intersections, parking garages, and other areas where substantial numbers of vehicles idle for prolonged periods of time. The proposed project location is outside the urban center of Fresno, will not create a new ongoing CO-emitting operation, and is therefore not a project of concern regarding CO hot-spots.

# Mitigation Measures

Implementation of the following mitigation measures would reduce potentially significant air quality impacts to less-than-significant levels.

### Mitigation Measure AQ-1: Implement SJVAPCD Regulation VIII Control Measures for Construction Emissions of PM10

The detailed requirements of the Dust Control Plan are included in Appendix C. As part of that plan, the following controls are required to be implemented at all construction sites:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)*
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

### Mitigation Measure AQ-2: Implement Enhanced Control Measures for Construction Emissions of PM10

The following measures will be implemented at construction sites when required to mitigate significant PM10 impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):

- Limit traffic speeds on unpaved roads to 15 miles per hour (mph); and
- Install sandbags or other erosion control measures to prevent silt runoff.

The following measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions:

- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
- Suspend excavation and grading activity when winds exceed 20 mph (Regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent (20%) opacity limitation); and
- Limit the area subject to excavation, grading and other construction activity at any one time.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **IV.** | **BIOLOGICAL RESOURCES.** A project's effect on biological resources will normally be considered potentially significant if: | | | | |
| 1. | The project occurs in an undeveloped area not under regular cultivation for 5 years (orchards, row crops, dry farming), or presently possesses vegetation or other native or naturalized habitat. | ❑ | ■ | ❑ | ❑ |
| 2. | The project area is adjacent to native and/or non-native vegetation areas as evidenced by a site visit or other conclusive site-specific evidence (e.g., Kings River corridor area). | ❑ | ■ | ❑ | ❑ |
| 3. | The project is within 300 feet of the Kings River, a marsh, intermittent lake, intermittent stream, spring, perennial stream, or other jurisdictional wetlands that qualifies under the United States Army Corps of Engineers wetlands criteria. | ❑ | ■ | ❑ | ❑ |
| 4. | The project is within the known range of an endangered or threatened plant or animal species. | ❑ | ■ | ❑ | ❑ |
| 5. | The project would conflict with a habitat conservation plan or natural community conservation plan (e.g., Kings River Corridor Specific Plan). | ❑ | ■ | ❑ | ❑ |
| 6. | Project will have an effect on species listed as threatened or endangered and which are part of a recognized population, and/or other wildlife and plant species as evidenced by site visit or other conclusive site-specific evidence along the Kings River riparian area. | ❑ | ■ | ❑ | ❑ |
| 7. | Pedestrian or vehicular access to natural habitat areas that would jeopardize the viability of such areas as determined by the conformance with open space or conservation plans, such as the Kings River Corridor Specific Plan. | ❑ | ❑ | ❑ | ■ |
| 8. | The project is within 200 feet of the Kings River riparian area as defined in Section 1.4 of the Thresholds of Significance for the City of Reedley. | ❑ | ■ | ❑ | ❑ |

In cases where the project area would be considered to include the entire parcel the above tests can be applied to the area that would be developed rather than the entire parcel if:

1. Development would only occur on a limited portion thereof (such as an accessory structure on a 40-acre lot); and
2. The project description accurately describes all development that would occur as a result of the project including roads, parking areas, etc.; and
3. There is little likelihood of disturbance to the remainder of the parcel.

The following biological resources discussion and impact evaluation is primarily summarized from the Natural Environment Study prepared for the proposed project (City of Reedley 2009).

# Methodology

## Prefield investigation

ICF Jones & Stokes biologists reviewed existing information and conducted field surveys to identify biological resource issues associated with the proposed Project. The following information was reviewed:

- California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California (2007);
- California Natural Diversity Database (CNDDB) records search of the Reedley, Sanger, Traver, Wahtoke, Orange Cove North, Orange Cove South, Selma, Burris Park, and Monson U.S. Geological Survey (USGS) 7.5-minute quadrangles (California Natural Diversity Database 2007);
- a list of endangered and threatened species that may occur in or be affected by projects in the Reedley USGS 7.5-minute quadrangle and in the County (USFWS 2007);
- California list of noxious weed species (California Department of Food and Agriculture 2004) and invasive plant inventory (California Invasive Plant Council 2006); and
- the Soil Survey of Fresno County, California (Huntington 1971).

This information was used to develop lists of special-status species and other sensitive biological resources that could be present in the project area.

## Field Surveys

A habitat-based site evaluation was conducted on May 9, 2007 by ICF Jones & Stokes botanist Lisa Webber and wildlife biologist Erin Hitchcock, and consisted of walking along Manning Avenue, the Manning Avenue Bridge, and the banks

of the Kings River. A wetland delineation of the Kings River and associated wetlands was also conducted on May 9, 2007 by ICF Jones & Stokes soil scientist Scott Frazier. The general purposes of the field surveys were the following:

- characterize biological communities and their associated wildlife habitat uses;
- determine whether suitable habitat was present for special-status species that have the potential to occur in the project area and determine whether additional surveys during the appropriate season would be required;
- provide biological resource information to the City for consideration in the planning, design, and implementation of the project; and
- delineate wetlands and waters of the United States.

Based on the information collected during this initial survey, a focused elderberry shrub survey for valley elderberry longhorn beetle was deemed necessary. This survey was conducted on June 20, 2007. A complete list of plant and wildlife species observed during the field surveys is on file at ICF Jones & Stokes.

## Special-Status Species Defined

For the purpose of this initial study, special-status species are plants, animals, and fish that are legally protected under the ESA or CESA, or other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status plants, animals, and fish fall into the following categories:

- species listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register [FR] [proposed species]);
- species that are candidates for possible future listing as threatened or endangered under the ESA (71 FR 53755, September 12, 2006);
- species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5);
- species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380);
- plants listed as rare under the California Native Plant Protection Act (CNPPA) (California Fish and Game Commission 1900 et seq.);
- plants considered by the CNPS to be “rare, threatened, or endangered in California” (California Native Plant Society 2007);
- plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution, which may be

included as special-status species on the basis of local significance or recent biological information;

- animal species of special concern to California Department of Fish and Game (CDFG) (Remsen 1978 [birds], Williams 1986 [mammals], and Jennings and Hayes 1994 [amphibians and reptiles]); and
- animals fully protected in California (California Fish and Game Code 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

# Regulatory Requirements

## Endangered Species Act

The Endangered Species Act (ESA) of 1973, and subsequent amendments, provides regulation for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS) (with jurisdiction over plants, wildlife, and resident fish) and the National Marine Fisheries Service (NMFS) (with jurisdiction over anadromous fish and marine fish and mammals) oversee the ESA.

Section 7 of the ESA mandates that all federal agencies consult with USFWS and NMFS if they determine that a proposed project may affect a listed species or its habitat. The purpose of consultation with USFWS and NMFS is to ensure that the federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. Section 7 consultation for valley elderberry longhorn beetle (VELB), a threatened species (federal list), would be required due to the presence of elderberry shrubs within and adjacent to the study area.

Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. Take is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

## Migratory Bird Treaty Act

Executive Order (EO) 13186 (signed January 10, 2001) directs each federal agency taking actions that would have, or would likely have, a negative impact on migratory bird populations to work with USFWS to develop a Memorandum of Understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA); it does not constitute any legal authorization to take migratory birds. Take, under the MBTA, is defined as an action or attempt to pursue, hunt, shoot, capture, collect, or kill (Title 50, Code of Federal Regulations [CFR], Section 10.12). The definition includes "intentional" take (take that is the purpose of the activity in question) and "unintentional" take (take that results from, but is not the purpose of, the activity in question). The discussion of nesting migratory birds in Chapter 4 describes potential project impacts on migratory birds and mitigation measures to avoid impacts on those species.

## Clean Water Act: Section 401 and Section 404

Clean Water Act (CWA), Section 401, requires that applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States to obtain certification from the state in which the discharge would originate or, if appropriate, the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) must also comply with CWA Section 401.

After the California Environmental Quality Act (CEQA) process is complete, the project proponent would apply for water quality certification from the Regional Water Quality Control Board (RWQCB) to comply with CWA Section 401. The U.S. Army Corps of Engineers (USACE) would require compliance with Section 401 as a prerequisite to authorization of the project under Section 404.

The USACE and the U.S. Environmental Protection Agency (EPA) regulate the placement of fill into waters of the United States under CWA Section 404. Waters of the United States include lakes, rivers, streams and their tributaries,

and wetlands. Wetlands are defined for regulatory purposes as areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3).

The project proponent (City of Reedley) must obtain a permit from the USACE for all discharges of fill material into waters of the United States, including wetlands, before proceeding with the proposed project.

## California Environmental Quality Act

CEQA defines a significant effect on the environment as a substantial or potentially substantial adverse change in the physical conditions within the area affected by the project. It is the policy of the state to prevent the elimination of fish or wildlife species due to human activities and ensure that these species do not decline below self-perpetuating levels in order to preserve them for future generations.

## California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is on the federal and state lists, compliance with ESA satisfies CESA if the CDFG determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only state listed, the project proponent must apply for a take permit under Section 2081(b). One state-listed species, Swainson's hawk, has the potential to occur in the study area. Avoidance and minimization measures described in Chapter 4 would avoid potential impacts on this species.

## California Fish and Game Code Section 1602

Under this section of the California Fish and Game Code, agencies are required to notify CDFG before any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFG is required to propose reasonable changes to the project to protect the resource. These modifications are formalized in a Streambed

Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

## California Fish and Game Code Sections 3503 and 3503.5

Under these sections of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird or to take, possess, or destroy any birds of prey or their nest or eggs. Birds of prey and other migratory bird nests were observed in the proposed project area.

## Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional multi-species planning before special measures of the CESA become necessary.

## California Native Plant Protection Act

The California Native Plan Protection Act preserves, protects, and enhances endangered native plants in California. The act gave the California Fish and Game Commission the power to designate native plants as endangered, threatened, or rare and require permits for collecting, transporting, or selling such plants.

## Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) authorizes the State Water Resources Control Board (State Water Board) to regulate state water quality and protect beneficial uses. Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. If the USACE determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the RWQCB may impose waste discharge requirements (WDRs) if fill material is placed into waters of the state.

## Kings River Corridor Specific Plan

The following is a list of *Kings River Corridor Specific Plan* (2001) goals and policies that are relevant to the proposed project.

**2.4 Recreation, Open Space, and Access**
**Goal 1:** Protect and enhance existing native habitat, wildlife resources, and other aspects of the Kings River environment.

**Policy 1.2:** Enhance native vegetation in the Kings River riparian area as follows:

Using approved methods, young undesirable non-native plant species should be selectively removed from the native riparian habitat along the Kings River

Using proven methods, dominant native riparian plant species should be propagated locally and planted in the place of eradicated non-native plants.

**Policy 1.3:** Reforest designated "open space" lands between the Kings river and Kingwood Parkway) as an oak savannah which requires limited initial maintenance.

**Policy 1.4:** Protect identified areas of "significant natural habitat" by limiting access to these areas.

# Environmental Setting

## Habitat Types

Five distinct vegetation community types (valley oak riparian forest, riverine wetland, nonnative annual grassland, agricultural land, and landscaping) and one unvegetated community type (open water) occur in the project area (Figure 3-1).

**Table 3-3.** Communities within the Project Area

| Community Type | Area (acres) |
|---|---|
| Riparian Forest | 2.48 |
| Riverine Wetland | 0.06 |
| Nonnative Annual Grassland/Ruderal | 2.83 |
| Open Water (Kings River)[a] | 2.97 |
| Agricultural Land | 4.22 |
| **Total[b]** | **12.56** |

[a] The area of the open water community type does not equal the limits of jurisdictional waters of the United States.
[b] Total does not include approximately 13.5 acres of developed/landscaped areas on and adjacent to Manning Avenue.

The project area supports both common communities and natural communities of special concern. Common communities, which have little diversity of species, are habitats that are widespread, able to reestablish naturally after disturbance, or capable of supporting primarily nonnative species. These communities are not generally protected by agencies unless the specific site is habitat for special-status species or capable of supporting such species (e.g., raptor foraging or

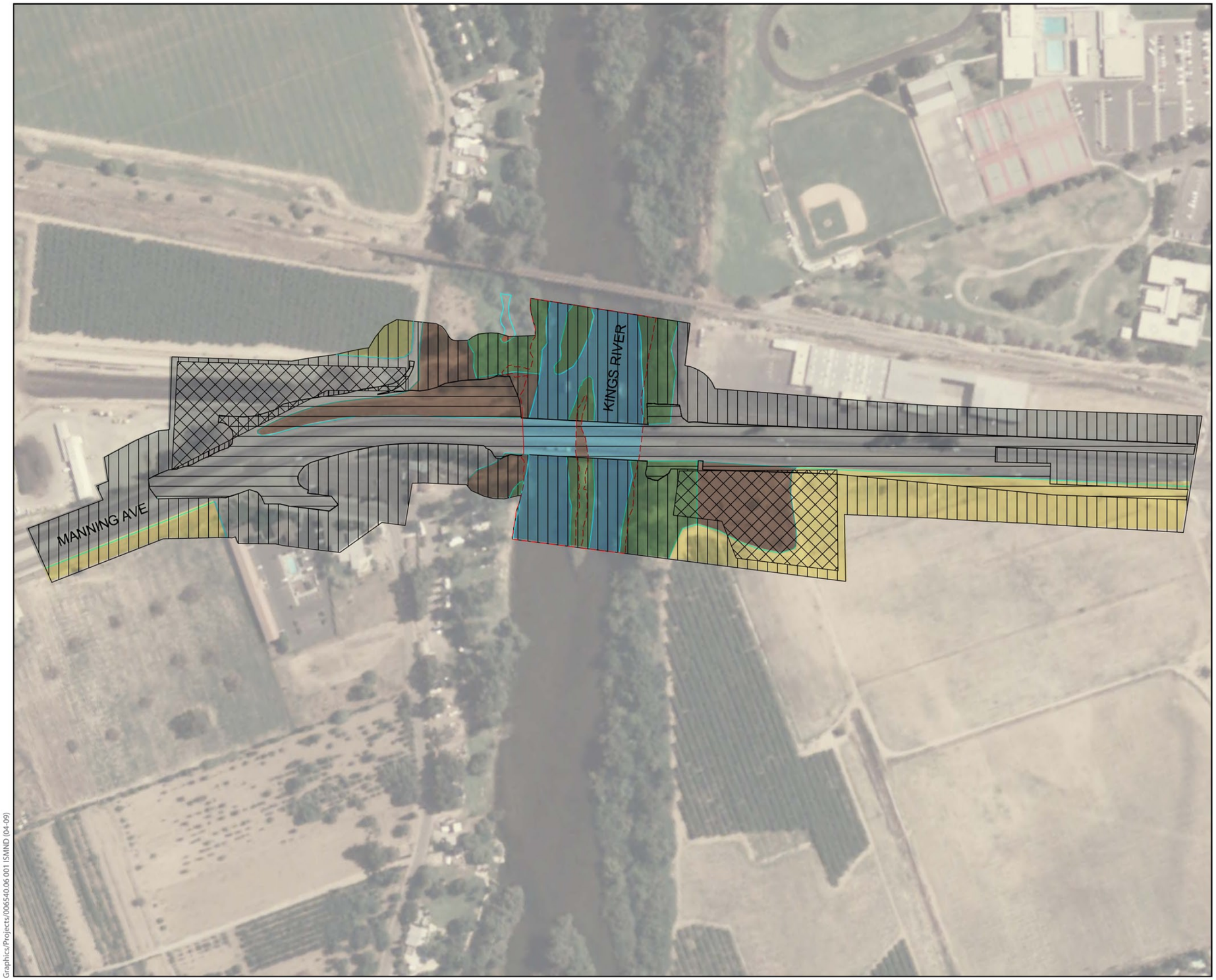



FIGURE 3-1
FULL BRIDGE REPLACEMENT ALTERNATIVE:
NATURAL COMMUNITIES AND IMPACT AREAS

## LEGEND

- DIRECT IMPACT
- STAGING AREA
- INDIRECT IMPACT AREA/STUDY AREA

## NATURAL COMMUNITY TYPES

- GREAT VALLEY VALLEY OAK/BLACK WILLOW RIPARIAN (2.48 ACRES)
- RIVERINE WETLAND (0.06 ACRES)
- NONNATIVE ANNUAL GRASSLAND / RUDERAL (2.83 ACRES)
- AGRICULTURE (4.22 ACRES)
- DEVELOPED / LANDSCAPE (13.62 ACRES)
- OPEN WATER (2.97 ACRES)
- OHWM

N

0 125 250
Scale 1"=250'

Graphics/Projects/006540.06.001 ISMND (04-09)

nesting habitat or upland habitat in a wetland watershed). The common communities in the project area are nonnative annual grassland, agricultural land, landscaping, and developed/paved areas.

Natural communities of special concern are habitats considered sensitive because of their high level of species diversity, high productivity, unusual nature, limited distribution, or declining status. The valley oak riparian forest, riverine wetland, and open water community types in the project area are natural communities of special concern. CDFG maintains a list of California terrestrial natural communities that are recognized by the CNDDB (California Department of Fish and Game 2003), although the classification system has been updated from the one used in the CNDDB. The CNDDB contains a current list of rare natural communities throughout the state.

Additionally, the USFWS considers certain habitats (such as wetlands) important to wildlife, and the USACE and the EPA consider wetland habitats important for water quality and wildlife.

The locations, dominant plant species, and typical wildlife species of each natural community area within the project area are described below. Lists of all plant and wildlife species observed during the field surveys are on file at ICF Jones & Stokes.

## Riparian Forest

Two types of riparian communities occur in the project area, valley oak riparian forest and black willow riparian forest. The valley oak riparian forest, also known as Great Valley valley oak riparian forest (California Department of Fish and Game 2003) is a multi-layered community type that includes an overstory of mature trees, a subcanopy of young trees and shrubs, and an understory of herbaceous vegetation. This community occurs along both banks of the Kings River in the project area. Species observed in the valley oak riparian forest include valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), California black walnut (*Juglans californica*), black willow (*Salix gooddingii*), narrow-leaved willow (*Salix exigua*), Fremont's cottonwood (*Populus fremontii*), California grape (*Vitis californica*), Mexican elderberry (*Sambucus mexicana*), reed canarygrass (*Phalaris arundinancea*), mugwort (*Artemisia douglasiana*), and Santa Barbara sedge (*Carex barbarae*). White mulberry trees (*Morus alba*) occur adjacent to and under the bridge within the area mapped as valley oak riparian forest. The black willow riparian community covers the two islands within the river in the project area. Species observed in this community include black willow, narrow-leaved willow, horsetail (*Equisetum* sp.), cocklebur (*Xanthium strumarium*), reed canarygrass, and common yellow monkeyflower (*Mimulus guttatus*).

Riparian vegetation provides a variety of functions, such as bank stabilization, erosion control, and wildlife habitat. Riparian forest habitats provide breeding and foraging areas for a wide range of avian species. Woodpeckers, such as Nuttall's woodpecker (*Picoides nuttallii*) and northern flicker (*Colaptes auratus*),

excavate nest holes in trees. Abandoned nest holes are used by other birds such as ash-throated flycatcher (*Myiarchus cinerascens*) and western screech owl (*Otus kennicottii*). Other avian species typical of riparian areas in the region include yellow-billed magpie (*Pica nuttalli*), western scrub jay (*Aphelocoma californica*), northern oriole (*Icterus galbula*), and Bewick's wren (*Thryomanes bewickii*).

Small mammals occurring in riparian forest habitats may include the ornate shrew (*Sorex ornatus*), deer mouse (*Peromyscus maniculatus*), and brush mouse (*Peromyscus boylei*). Predators such as the long-tailed weasel (*Mustela frenata*), red fox (*Vulpes vulpes*), and gray fox (*Urocyon cinereoargenteus*) are likely to be attracted to the wooded riparian habitats because of the abundance of prey.

## Riverine Wetland

Riverine wetland is a herbaceous community that occurs in depressions in the project area and most likely intercepts groundwater during high-flow periods. Dominant species in this community type are Santa Barbara sedge, reed canarygrass, willow weed (*Epilobium ciliatum*), and horseweed (C*onyza canadensis*). The riverine wetland is anticipated to be considered jurisdictional by the USACE and subject to regulation under CWA Section 404. Regardless of USACE jurisdiction, however, local, state, and federal agencies recognize riverine wetlands as sensitive natural communities.

Riverine wetlands are important to numerous amphibians, wading birds, waterfowl, and shorebirds. Common wildlife known to occur in wetland habitats include bullfrogs (*Rana catesbeiana*), tree frogs (*Hyla regilla*), great egrets (*Ardea alba*), snowy egrets (*Egretta thula*), soras (*Porzana carolina*), American coots (*Fulica americana*), marsh wrens (*Cistothorus palustris*), song sparrows (*Melospiza melodia*), and red-winged blackbirds (*Agelaius phoeniceus*).

## Nonnative Annual Grassland/Ruderal

Nonnative annual grassland is a common community that consists of annual grasses and a variety of native and nonnative annual forbs. It occurs within areas upslope of the riparian community and along the edge of Manning Avenue. Dominant grass species within these areas include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Lolium multiflorum*). Other characteristic species include redstem filaree (*Erodium cicutarium*), hirschfeldia (*Hirschfeldia incana*), wild radish (*Raphanus sativus*), Russian thistle (*Salsola tragus*), and old man of spring (*Senecio vulgaris*). Few native species were observed in this community type during the field survey, and most of the dominant species observed are invasive species. West of the Kings River, the area mapped as annual grassland supports two valley oaks. Several nonnative, invasive eucalyptus trees also occur north of Manning Avenue.

Annual grasslands are used by many wildlife species for foraging and breeding. The small amount of grassland habitat in the project area limits its suitability as foraging or breeding habitat for wildlife. In addition, its proximity to noise and disturbance from vehicle traffic along Manning Avenue reduces the quality of the habitat for wildlife and decreases the number of species expected to occur there. Grasslands support numerous small mammals, including California vole (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), and Botta's pocket gopher (*Thomomys bottae*). Additionally, grasslands provide suitable foraging habitat for coyotes (*Canis latrans*), gopher snakes (*Pituophis melanoleucus*), red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), American kestrels (*Falco sparverius*), barn owls (*Tyto alba*), great-horned owl (*Bubo virginianus*), and northern harriers (*Circus cyaneus*), which are known to prey on the above-listed small mammals, along with brush rabbits (*Sylvilagus bachmani*) and black-tailed jackrabbits (*Lepus californicus*). Other species associated with grassland habitats include seed-eating and insectivorous species, including western kingbirds (*Tyrannus verticalis*), savannah sparrows (*Passerculus sandwichensis*), western bluebirds (*Sialia mexicana*), western meadowlarks (*Sturnella neglecta*), and pallid bat (*Antrozous pallidus*).

## Open Water

The Manning Avenue Bridge crosses the Kings River. Within the project area, a portion of the river is open water. Two islands that support riparian vegetation, as discussed above, occur within the river, and open water flows on either side of and between the islands. The ordinary high water mark of the Kings River is approximately 290 feet, as described in the delineation report (Appendix C).

Open water areas provide habitat for amphibians, fish, and aquatic reptiles and foraging habitat for waterfowl and fish-eating birds. The presence of predatory fish, however, decreases the likelihood that some amphibian species would occur in the Kings River. Wildlife species that could occur in open water areas include bullfrog, western pond turtle (*Emys marmorata)*, common garter snake (*Thamnophis sirtalis*), mallard (*Anas platyrhynchos*), and common merganser (*Mergus merganser*). Several species of bats, including, but not limited to, Mexican free-tailed bat (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), pallid bat, and greater western mastiff bat (*Eumops perotis californicus*), could also forage over the river. The Kings River contains several species of fish, including rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*).

## Agricultural Land

Agricultural land in the project area includes fields of row crops and orchards. These communities occur in the southeastern portion of the project area above the riverbank.

Agricultural landscapes support numerous species of small mammals, including California voles, deer mice, western harvest mice, and California ground squirrels (*Spermophilus beecheyi*), which in turn provide a prey base for larger predators, including red-tailed hawks, red-shouldered hawks, American kestrels, barn owls, great-horned owl, northern harriers and coyotes. Other bird species—including Brewer's blackbirds (*Euphagus cyanocephalus*), American crows (*Corvus brachyrhynchos*), common ravens (*Corvus corax*), rock doves (*Columba livia*), mourning doves (*Zenaida macroura*), and European starlings (*Sturnus vulgaris*)—are also known to occur in agricultural landscapes.

### Developed/Graded Areas

Developed/graded areas occur throughout the project area in the form of roads, a bridge, graveled areas, and structures associated with a camping resort along the river. These areas are characterized by a mixture of landscape ornamentals, including pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), pine (*Pinus* sp.), turf grass, and ruderal species that typically colonize recently disturbed or graded areas. Because of noise disturbance and human activity, developed/graded portions of the project area provide habitat of low value. However, bridges provide nesting habitat for cliff swallows (*Petrochelidon pyrrhonota*) and roosting habitat for numerous bats. Bats that could use the bridge in project area for roosting habitat include Mexican free-tailed bat, pallid bat, big brown bat (*Eptisicus fuscus*), and Yuma myotis.

## Special-Status Species

### Special-Status Plants

During the prefield investigation, 21 special-status plant species were determined to have the potential to occur in the project region (Table 3-4). Suitable plant communities for 12 species were identified in the project area; however, suitable soil types for these species were not present. In addition, the project area has a high level of disturbance from previous activities such that suitable microhabitat conditions for special-status plant species are not present. The annual grassland community in the project area is degraded due to previous bridge construction and current adjacent land uses; it supports primarily ruderal (weedy) species. No special-status species were observed in the project area during the May 9, 2007 field survey, and the botanist determined that the occurrence of late-blooming species was unlikely. Therefore, the project area has a low potential to support special-status plant species.

### Special-Status Wildlife

Based on review of the CNDDB (California Natural Diversity Database 2007) and USFWS lists (U.S. Fish and Wildlife Service 2007) and professional knowledge of species distributions, 25 special-status wildlife species were

**Table 3-4.** Special-Status Plant Species with Potential to Occur in the Manning Avenue Bridge Replacement Project Area 

| Common Name<br>*Scientific Name* | Status<br>Federal/State/CNPS | Geographic Distribution | Habitat Requirements | Blooming Period | Habitat Present in Study Area | Rationale |
|---|---|---|---|---|---|---|
| Brittlescale<br>*Atriplex depressa* | –/–/1B.2 | Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Solano, Stanislaus, Tulare, and Yolo counties | Annual herb found in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools/ alkaline clay; 3–66 feet (1–20 meters). | May–Oct | No | No suitable (alkaline or clay) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| Earlimart orache<br>*Atriplex erecticaulis* | –/–/1B.2 | San Joaquin Valley in Kings, Kern and Tulare counties | Annual herb found in valley and foothill grassland/semi-alkaline and alkaline; 131–328 feet (40–100 meters). | Aug–Sept | No | No suitable (alkaline) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. |
| Lesser saltscale<br>*Atriplex minuscula* | –/–/1B.1 | Sacramento and San Joaquin Valley, Butte County and from Merced County to Kern County | Annual herb found in chenopod scrub, Playas, Valley and foothill grassland/alkaline, sandy; 49–656 feet (15–200 meters). | May–Oct | No | No suitable (alkaline) soils present for this species. Soils not sandy outside of the active river channel and floodplain, where grassland habitat occurs. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| Slender Moonwort<br>*Botrychium lineare* | C/–/1B.3 | Fresno County, CA and Idaho, Nevada, Oregon, Utah, and Washington. Known in CA from only one small occurrence near Piute Pass. Only ten occurrences rangewide, some historical (CNPS 2007). | Perennial herb found in upper montane coniferous forest/ often disturbed areas; 8,530 feet (2,600 meters). | Unknown | No | No coniferous forest habitat present. Outside of known elevational range for this species. |
| Succulent owl's-clover<br>*Castilleja campestris* ssp. *succulenta* | T/E/1B.2 | Southern Sierra Nevada foothills, eastern San Joaquin Valley, Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus counties | Hemiparasitic annual herb found in vernal pools/often acidic soils; 164–2,461 feet (50–750 meters). | Apr–May | No | No vernal pool habitat present. |

**Table 3-4.** Continued



| Common Name<br>*Scientific Name* | Status<br>Federal/State/CNPS | Geographic Distribution | Habitat Requirements | Blooming Period | Habitat Present in Study Area | Rationale |
|---|---|---|---|---|---|---|
| Mariposa pussy-paws<br>*Calyptridium pulchellum* | T/–/1B.1 | Fresno, Madera, and Mariposa counties | Annual herb found in chaparral and cismontane woodland /sandy or gravelly, granitic soils; 1,312–4,003 feet (400–1,220 meters). | Apr–Aug | No | Outside of known elevational range for this species. Not observed during blooming-period surveys. |
| San Benito evening-primrose<br>*Camissonia benitensis* | T/E/1B.1 | Fresno and San Benito counties | Annual herb found in chaparral, cismontane woodland, valley and foothill grassland /serpentinite alluvium, clay or gravelly; 1,969–4,199 feet (600–1,280 meters). | Apr–June | No | No suitable (serpentinite) soils present for this species. Outside of known elevational range for this species. Not observed during blooming-period surveys. |
| California jewelflower<br>*Caulanthus californicus* | E/E/1B.1 | Fresno, Kings, Kern, Santa Barbara, San Luis Obispo, and Tulare counties | Annual herb found in Chenopod scrub, Pinyon and juniper woodland, and valley and foothill grassland /sandy; 230–3,281 feet (70–1,000 meters). | Feb–May | No | Soils not sandy outside of the active river channel and floodplain, where grassland habitat occurs. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| Hoover's spurge<br>*Chamaesyce hooveri* | T/–/1B.2 | Butte, Colusa, Glenn, Merced, Stanislaus, Tehama, and Tulare counties | Annual herb found in vernal pools; 82–820 feet (25–250 meters). | Jul–Sept (uncommonly Oct) | No | No vernal pool habitat present. |
| Palmate-bracted bird's-beak<br>*Cordylanthus palmatus* | E/E/1B.1 | Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo counties | Hemiparasitic annual herb found in chenopod scrub, and valley and foothill grassland /alkaline; 16–509 feet (5–155 meters). | May–Oct | No | No suitable (alkaline) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period surveys. |

| Common Name<br>*Scientific Name* | Status<br>Federal/State/CNPS | Geographic Distribution | Habitat Requirements | Blooming Period | Habitat Present in Study Area | Rationale |
|---|---|---|---|---|---|---|
| Recurved larkspur<br>*Delphinium recurvatum* | –/–/1B.2 | San Joaquin Valley and interior valleys of the South Coast Ranges, Contra Costa County to Kern County | Perennial herb found in alkaline soils in annual grassland, chenopod scrub, cismontane woodland; 10–2,461 feet (3–750 meters). | Mar–June | No | No suitable (alkaline) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period surveys. |
| Spiny-sepaled button-celery<br>*Eryngium spinosepalum* | –/–/1B.2 | Eastern San Joaquin Valley and Sierra Nevada foothills, Calaveras, Fresno, Madera, Stanislaus, Tulare, and Tuolumne counties | Annual/perennial herb found in valley and foothill grassland, vernal pools; 330–840 feet (100–255 meters). | Apr–May | No | No vernal pool habitat present; annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. Nearest recorded occurrences are 9.5 and 10 miles northeast of the study area (CNDDB 2007). |
| Kings River monkeyflower<br>*Mimulus acutidens* | –/–/3 | Fresno, Madera, and Tulare counties | Annual herb found in cismontane woodland and lower montane coniferous forest; 1,001–4,003 feet (305–1,220 meters). | Apr–July | No | Outside of known elevational range for this species. Not observed during blooming-period survey. |
| California satintail<br>*Imperata brevifolia* | –/–/2.1 | Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura counties | Rhizomatous herb found in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps often in alkali soils, and riparian scrub/mesic; 0–1,640 feet (0–500 meters). | Sept–May | No | Soils unsuitable for this species (not alkali). Not observed during blooming-period survey. Nearest recorded location (last observed in 1933) is estimated at 0.5 mile southeast of the study area "on a canal bank near Reedley" (CNDDB 2007). |
| San Joaquin woolly-threads<br>*Monolopia congdonii* | E/–/1B.2 | Fresno, Kings, Kern, Santa Barbara, San Benito, San Luis Obispo, and Tulare counties | Annual herb found in chenopod scrub and valley and foothill grassland (sandy soils); 197–2,625 feet (60–800 meters). | Feb–May | No | Soils not sandy outside of the active river channel and floodplain, where grassland habitat occurs. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |

**Table 3-4.** Continued



| Common Name *Scientific Name* | Status Federal/State/CNPS | Geographic Distribution | Habitat Requirements | Blooming Period | Habitat Present in Study Area | Rationale |
|---|---|---|---|---|---|---|
| San Joaquin Valley Orcutt grass *Orcuttia inaequalis* | T/E/1B.1 | Scattered locations along east edge of the San Joaquin Valley and adjacent foothills, from Stanislaus County to Tulare County | Annual herb found in vernal pools; 33–2,477 feet (10–755 meters). | May–Sep | No | No vernal pool habitat present. |
| Hairy Orcutt grass *Orcuttia pilosa* | E/E/1B.1 | Scattered locations along east edge of the Central Valley and adjacent foothills, from Tehama County to Merced County | Annual herb found in vernal pools; 180–656 feet (55–200 meters). | May–Aug | No | No vernal pool habitat present. Nearest recorded occurrence is an extirpated occurrence approximately 5 miles northeast of the study area. |
| Hartweg's golden sunburst *Pseudobahia bahiifolia* | E/E/1B.1 | Eastern side of Sacramento–San Joaquin Valleys and adjacent foothills, historically as far north as Yuba County | Annual shrub found predominantly on northern slopes of rocky, bare areas along rolling hills, shady creeks, adjacent to vernal pools and streams, on heavy clay soils in grasslands, 50–500 feet (15–150 meters). | Mar–Apr | No | No suitable soils for this species; no rocky, bare areas in the annual grassland, which is degraded and dominated by ruderal species. |
| San Joaquin adobe sunburst *Pseudobahia peirsonii* | T/E/1B.1 | Fresno, Kern, and Tulare counties | Annual herb found in cismontane woodland, valley and foothill grassland /adobe clay soils; 295–2,625 feet (90–800 meters). | Mar–Apr | No | No suitable soils in the riparian woodland for this species; the annual grassland is degraded and dominated by ruderal species. Nearest recorded locations are an extirpated occurrence approximately 6.5 miles southeast of the study area and an occurrence approximately 8 miles north of the study area (CNDDB 2007). |
| Keck's checker-mallow *Sidalcea keckii* | E/–/1B.1 | Tulare and Fresno counties | Annual herb found in cismontane woodland, valley and foothill grassland /serpentinite clay; 394–1,394 feet (120–425 meters). | Apr | No | No suitable soils for this species. Annual grassland habitat is degraded and dominated by ruderal species. |

**Table 3-4.** Continued 

| Common Name<br>*Scientific Name* | Status<br>Federal/State/CNPS | Geographic Distribution | Habitat Requirements | Blooming Period | Habitat Present in Study Area | Rationale |
|---|---|---|---|---|---|---|
| Green's tuctoria<br>*Tuctoia greenei* | E/R/1B.1 | Scattered distribution along eastern Central Valley and foothills from Shasta County to Tulare County | Annual herb found in dry vernal pool bottoms; 100–3,350 feet (30–1,070 meters). | May–Jun | No | No vernal pool habitat present. |

Status explanations:

**Federal**
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
– = no listing.

**State**
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
– = no listing.

**California Native Plant Society**
1A = List 1A species: presumed extinct in California.
1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = Rare, threatened, or endangered in California, but more common elsewhere
0.2 = Fairly endangered in California
0.1 = Seriously endangered in California
3 = More information about this plant is needed
– = no listing.

**Table 3-5.** Special-Status Wildlife Species with Potential to Occur in the Manning Avenue Bridge Replacement Project Area 

| Common Name<br>*Scientific Name* | Status<br>Federal/State | Geographic Distribution | Habitat Requirements | Potential Occurrence in Study Area |
|---|---|---|---|---|
| **Invertebrates** | | | | |
| Valley elderberry longhorn beetle<br>*Desmocerus californicus dimorphus* | T/– | Stream side habitats below 3,000 feet throughout the Central Valley | Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant | High—CNDDB records occur within 10 miles of the study area; closest occurrence just under 1 mile from the study area. Elderberry shrubs occur in the study area. |
| Vernal pool fairy shrimp<br>*Branchinecta lynchi* | T/– | Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County | Common in vernal pools; also found in sandstone rock outcrop pools | None—CNDDB records occur within 10 miles of the study area, however, there are no vernal pools, seasonal wetlands, rock outcrop pools, or other suitable water bodies within the study area. |
| Vernal pool tadpole shrimp<br>*Lepidurus packardi* | E/– | Shasta County south to Merced County | Vernal pools and ephemeral stock ponds | None—CNDDB records occur within 10 miles of the study area, however there are no vernal pools or ponds within the study area. |
| **Amphibians** | | | | |
| California red-legged frog<br>*Rana aurora draytonii* | T/SSC | Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehema County to Fresno County | Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods. | None—There are no known populations within 10 miles of the study area. The portion of the Kings River in the study area does not contain still to slow moving pools required for breeding. No other water bodies occur in the study area. |
| California tiger salamander<br>*Ambystoma californiense* | T/SSC | Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County. | Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy | None—CNDDB records occur within 10 miles of the study area. Permanent water bodies, such as the Kings River are not suitable for this species. No other water bodies occur in the study area. |
| Mountain yellow-legged frog<br>*Rana muscosa* | C/SSC | Found in the Sierra Nevada above 4,500 feet from Plumas County to southern Tulare County. Isolated populations in Butte County and near Mono Lake, Mono County | Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, sub-alpine conifer, and wet meadow habitats. | None—No CNDDB records occur within 10 miles of the study area. The study area is outside of the elevational range for this species. |

| Common Name<br>*Scientific Name* | Status<br>Federal/State | Geographic Distribution | Habitat Requirements | Potential Occurrence in Study Area |
|---|---|---|---|---|
| Yosemite toad<br>*Bufo canorus* | C/SSC | Sierra Nevada from Blue Lake region north of Ebbets Pass in Alpine County to 5 km south of Kaiser Pass in the Evolution Lake/Darwin Canyon area in Fresno County; 4,800-12,000 feet, mostly above 9,000 feet. | Inhabits montane wet meadows and seasonal ponds associated with lodgepole pine and subalpine conifer forests. Breeds in shallow pools or lake margins, shelters in burrows or clumps of grass, sedges or willows. | None—No CNDDB records occur within 10 miles of the study area. The study area is outside of the elevational range for this species. |
| Western spadefoot<br>*Scaphiopus hammondii* | –/SSC | Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California | Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands. | None—CNDDB records occur within 10 miles of the study area but the Kings River does not provide suitable habitat for this species. The seasonal wetland adjacent to the Kings River is not suitable for this species. |
| **Reptiles** | | | | |
| Blunt-nosed leopard lizard<br>*Gambelia (=Crotaphytus) silus* | E/E, FP | San Joaquin Valley from Stanislaus County through Kern County and along the eastern edges of San Luis Obispo and San Benito Counties. | Open habitats with scattered low bushes on alkali flats, and low foothills, canyon floors, plains, washes, and arroyos; substrates may range from sandy or gravelly soils to hardpan. | None—No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable habitat for this species. |
| Giant garter snake<br>*Thamnophis couchi gigas* | T/T | Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno | Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter | None—No CNDDB records occur within 10 miles of the study area. The Kings River is a high gradient river and would not be suitable for giant garter snake. |
| Western pond turtle<br>*Emys marmorata* | –/SSC | Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada | Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests | Moderate—CNDDB records occur within 10 miles of the study area; closest reported occurrence is 10 miles northeast of the study area in Wahtoke Creek. The Kings River provides suitable habitat for this species. |

| Common Name<br>*Scientific Name* | Status<br>Federal/State | Geographic Distribution | Habitat Requirements | Potential Occurrence in Study Area |
|---|---|---|---|---|
| **Birds** | | | | |
| California condor<br>*Gymnogyps californianus* | E/E, FP | Historically, rugged mountain ranges surrounding the southern San Joaquin Valley; currently, most individuals are in captive populations, but a few birds were recently released in the rugged portions of the Los Padres National Forest. | Requires large blocks of open savanna, grasslands, and foothill chaparral with large trees, cliffs, and snags for roosting and nesting. | None—No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable nesting or foraging habitat. |
| Bald eagle<br>*Haliaeetus leucocephalus* | D/E, FP | Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County | In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean | None—Potential winter visitor to the study area only. No CNDDB records occur within 10 miles of the study area. |
| White-tailed kite<br>*Elanus leucurus* | –/FP | Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills, to western San Diego County at the Mexican border | Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging | Moderate—No CNDDB records occur within 10 miles of the study area, however, the riparian woodlands in study area provide suitable nesting habitat for this species. |
| Swainson's hawk<br>*Buteo swansong* | –/T | Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County. | Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields. | Moderate—No CNDDB records occur within 10 miles of the study area, however, the riparian woodlands in study area provide suitable nesting habitat for this species. |
| Western burrowing owl<br>*Athene cunicularia hypugea* | –/SSC | Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast | Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows | Low—CNDDB records occur within 10 miles of the study area, however, this species does not occur in Riverine habitats. Non-native grassland along Manning Avenue provides limited suitable denning and foraging habitat for this species. |

| Common Name<br>*Scientific Name* | Status<br>Federal/State | Geographic Distribution | Habitat Requirements | Potential Occurrence in Study Area |
|---|---|---|---|---|
| Tricolored blackbird<br>*Agelaius tricolor* | –/SSC | Largely endemic to California; permanent resident in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties | Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant | None—No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable nesting or foraging habitat for this species. |
| Western yellow-billed cuckoo<br>*Coccyzus americanus occidentalis* | –/E | Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers | Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant | None—CNDDB records occur within 10 miles of the study area. The study area is not suitable for this species as it consists mainly of valley oak riparian with numerous scrub jays. |
| **Mammals** | | | | |
| Greater western mastiff bat<br>*Eumops perotis californicus* | –/SSC | Occurs along the western Sierra primarily at low to mid elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border | Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but may also use crevices in trees, buildings, and tunnels | Moderate—CNDDB records occur within 10 miles of the study area; species was not detected in the study area during bat acoustical monitoring. Study area provides suitable roosting and foraging habitat. |
| Pallid bat<br>*Antrozous pallidus* | –/SSC | Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations | Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts | Moderate—CNDDB records occur within 10 miles of the study area; bat acoustical monitoring picked up a few calls in the echolocation range of pallid bat (25–30 kHz) but positive identification of this species could not be made. Study area provides suitable roosting and foraging habitat. |

| Common Name<br>*Scientific Name* | Status<br>Federal/State | Geographic Distribution | Habitat Requirements | Potential Occurrence in Study Area |
|---|---|---|---|---|
| Fresno kangaroo rat<br>*Dipodomys nitratoides exilis* | E/E | Historically found from Merced County south to central Fresno County | Found at elevations from 200 to 300 feet in alkali sink habitats | None—No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable habitat for this species. |
| Tipton kangaroo rat<br>*Dipodomys nitratoides nitratoides* | E/E | Occurs in the Tulare Lake Basin in portions of Fresno, Tulare, King and Kern Counties. | Found at elevations from 200 to 300 feet in arid grassland and alkali desert scrub communities with sparsely scattered shrubs; soil is usually finely textured and alkaline; may use areas that flood in winter and spring. | None—No CNDDB records occur within 10 miles of the study area. This species is found in arid habitats not present in the study area. |
| Giant kangaroo rat<br>*Dipodomys ingens* | E/E | Occurs at high densities in only 12 square miles of habitat along the western side of the San Joaquin Valley, in five separate localities on Elkhorn Plain, Carrizo Plain, McKittrick Valley, and Cuyama Valley in Kern and San Luis Obispo Counties. | Restricted to flat, sparsely vegetated areas with native annual grassland and shrubland habitats; requires uncultivated soils consisting of dry, fine, sandy loams for burrowing. | None—No CNDDB records occur within 10 miles of the study area. This species is found in sparsely vegetated grassland and shrubland habitats not present in the study area. |
| Pacific fisher<br>*Martes pennanti* | C/SSC | Pacific fisher occurs in the Sierra Nevada, Cascades, and Klamath Mountains and in small portions of the North Coast Ranges. | Occupies large, mature, dense coniferous forests with greater than 50% canopy closure and deciduous-riparian habitat with extensive canopy closure. Hollow logs and trees, snags, brush piles, and other protected cavities are used as den sites. | None—No CNDDB records occur within 10 miles of the study area. The study area is outside of the elevational range for this species. |
| San Joaquin kit fox<br>*Vulpes macrotis mutica* | E/T | Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County | Saltbush scrub, grassland, oak, savanna, and freshwater scrub | Low—No CNDDB records occur within 10 miles of the study area (closest occurrence 12.5 miles). This species may use the study area as a migration corridor but the study area does not contain a substantial small mammal prey base for foraging and contains limited suitable denning habitat in the non-native grassland along Manning Avenue. |

| Common Name<br>*Scientific Name* | Status<br>Federal/State | Geographic Distribution | Habitat Requirements | Potential Occurrence in Study Area |
|---|---|---|---|---|
| **Fish** | | | | |
| Delta smelt<br>*Hypomesus transpacificus* | T/T | Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay | Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002). | None—Outside of known range |
| Central Valley steelhead<br>*Oncorhynchus mykiss* | T/– | Sacramento River and tributary Central Valley rivers | Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools. | None—Outside of known range |
| Lahontan cutthroat trout<br>*Oncorhynchus clarki henshawi* | T/– | Streams and lakes of the Lahontan system on the east side of the Sierra Nevadas | Clear cold mountain rivers | None—Outside of known range |
| Paiute cutthroat trout<br>*Oncorhynchus clarki seleniris* | T/– | Silver King Creek in Alpine County | Clear cold mountain rivers | None—Outside of known range |

Status explanations:

**Federal**

E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
PE = proposed for federal listing as endangered under the federal Endangered Species Act.
PT = proposed for federal listing as threatened under the federal Endangered Species Act.
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
– = no listing.

**State**

E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
– = no listing.

identified as having potential to occur within the project region (Table 3-5). After completion of the field surveys and a review of the species' distribution and habitat requirements data, the biologist determined that 17 of the 25 species would not occur in the project area due to the lack of suitable habitat or because the area is outside the species' known range. An explanation for the absence each of the species from the project area is provided in Table 3-5. Two species, San Joaquin kit fox and western burrowing owl, have low potential for occurrence due to the lack of suitable breeding habitat and the limited prey base within the project area. Because of this low potential, these species are not discussed further.

The remaining six special-status wildlife species—VELB (*Desmocerus californicus dimorphus*), western pond turtle (*Emys marmorata*), pallid bat (*Antrozous pallidus*), greater western mastiff bat (*Eumops perotis californicus*), white-tailed kite (*Elanus leucurus*), and Swainson's hawk (*Buteo swainsoni*)—have a moderate to high potential to occur in the project area or may be affected by construction activities. These species are discussed further in this report.

## Special-Status Fish

After review of the USFWS list (U.S. Fish and Wildlife Service 2007), four special-status fish species were initially identified as having the potential to occur within the project region (Table 3-5). Of the four special-status fish species listed in Table 3-5, none would occur at the project area because it lacks suitable habitat for the species or the area is outside the species' known range. An explanation for the absence each of the species from the project area is provided in Table 3-5.

## Other Protected Species

Other protected species include migratory birds, including raptors, and native trees.

### Migratory Birds

Non-special-status migratory birds, including raptors, have the potential to nest in trees and shrubs throughout the project area. Cliff swallows were observed nesting under the bridge in the project area. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected by CDFG codes 3503 and 3503.5 and the MBTA.

### Native Trees

Native oak, cottonwood, and willow trees occur within the riparian habitat, which could be of concern to CDFG with respect to the Streambed Alteration Agreement (Table 3-6). The locations of these trees are presented in Figure 3-2.

**Table 3-6.** Native Trees Located in the Study Area

| Tree Number[a] | Species | Approximate Diameter at Breast Height (inches)[b] |
|---|---|---|
| 1 | Valley oak | 18 + 18 |
| 2 | Valley oak | 24 |
| 3 | Fremont's cottonwood | 36 |
| 4 | Valley oaks (cluster) | 6, 4, 4, 4, 3, 3 |
| 5 | Black willows (cluster) | ≥ 24 each |
| 6 | Arroyo willow | 12 |
| 7 | Fremont's cottonwood | 18 |
| 8 | Valley oak | 8 |
| 9 | Valley oak | 24 |
| 10 | Valley oak | 24 |
| 11 | Valley oak | 12 + 12 + 12 + 12 |
| 12 | Valley oak | 12 + 8 |
| 13 | Valley oak | 6 |
| 14 | Black willow | 24 |
| 15 | Valley oak | 24 + 24 |
| 16 | Arroyo willow | 6 |
| 17 | Valley oak | 12 |

[a] Refers to numbers in Figure 3-2.

[b] Tree diameters with more than one number (+) indicate a multi-trunk tree.

## Wetlands and Waters of the United States

The Manning Avenue Bridge crosses the Kings River, a water of the United States. Within the project area, a portion of the river is open water. Two islands that support riparian vegetation occur within the river, and open water flows on either side of and between the islands. The ordinary high water mark (OHWM) of the Kings River is at approximately 290 feet as determined by the jurisdictional delineation (City of Reedley 2008b).

# Impact Evaluation

1, 2, 8. **Less than significant with mitigation**. Construction of the proposed project would result in the permanent loss of approximately 0.13 acre of riparian woodland within the project footprint (Figure 3-1). The permanent impact area is anticipated to include two valley oaks on the northeast bank.

Indirect impacts on approximately 2.33 acres of riparian woodland vegetation could occur from adjacent construction activity. Riparian vegetation is adjacent to the construction area but would not be removed for construction; however, it could sustain damage from equipment. This indirect impact would include effects within the driplines of several valley oak saplings and small trees and up

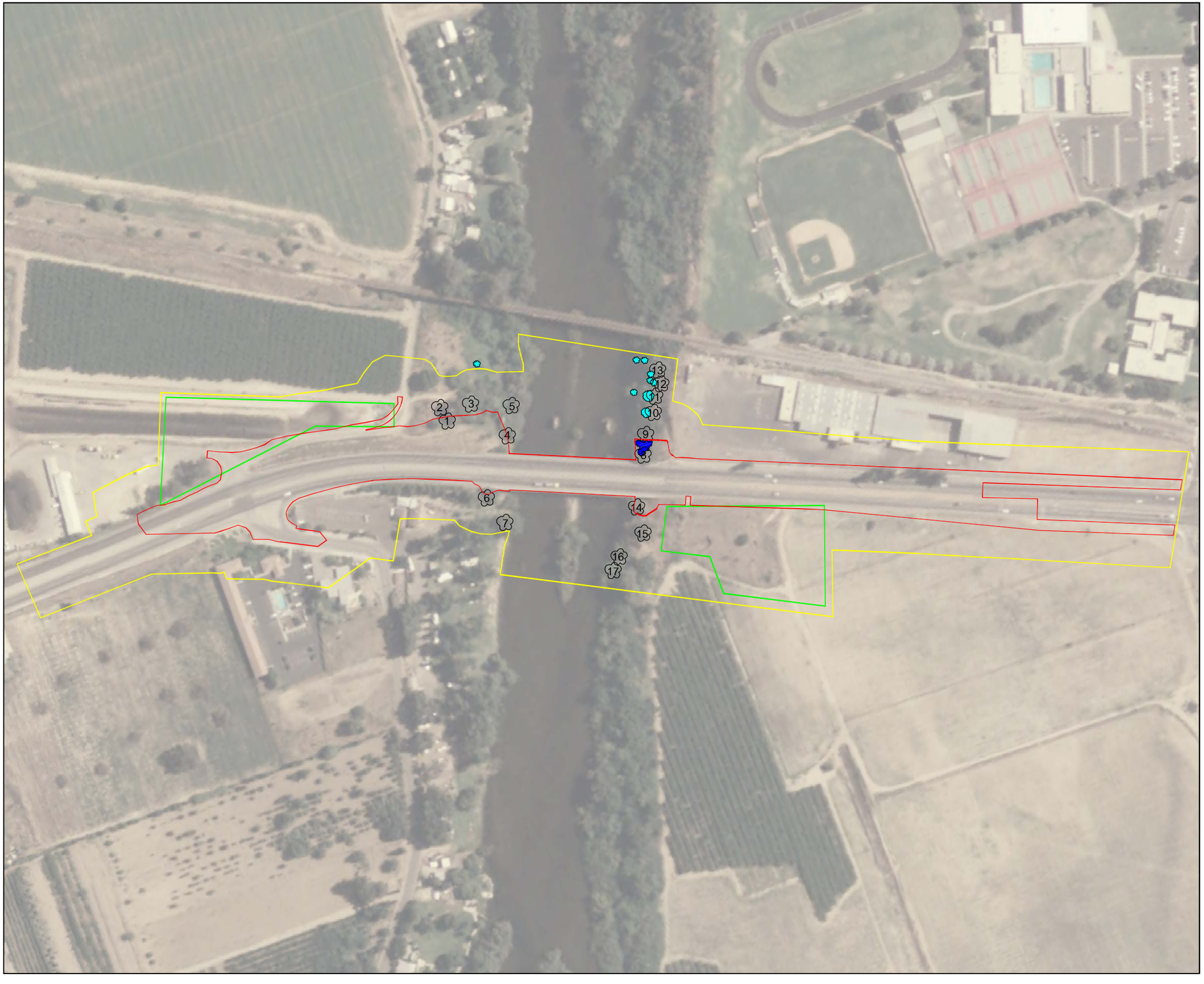



FIGURE 3-2
FULL BRIDGE REPLACEMENT ALTERNATIVE:
NATIVE TREES AND ELDERBERRY SHRUBS IN THE STUDY AREA

**LEGEND**

- DIRECT IMPACT
- STAGING AREA
- INDIRECT IMPACT AREA/STUDY AREA
- ELDERBERRY SHRUBS TO BE PROTECTED (NUMBERS 13-43)
- ELDERBERRY SHRUBS TO BE TRANSPLANTED (NUMBERS 1-12)
- TREES WITHIN CONSTRUCTION AREA

**Tree Types**

1. Valley Oak
2. Valley Oak
3. Fremont's Cottonwood
4. Valley Oaks
5. Black Willows
6. Arroyo Willow
7. Fremont's Cottonwood
8. Valley Oak
9. Valley Oak
10. Valley Oak
11. Valley Oak
12. Valley Oak
13. Valley Oak
14. Black Willow
15. Valley Oak
16. Arroyo Willow
17. Valley Oak

N

0 125 250
Scale 1"=250'

to six mature native trees, including two mature valley oaks, one cottonwood, and three willows.

State and federal agencies would require avoidance, minimization, and compensatory mitigation for the loss of riparian habitat. The loss or disturbance of riparian woodland vegetation is considered significant because the vegetation provides a variety of important ecological functions and values. Implementation of Mitigation Measure Bio-8 and 9 would reduce impacts to riparian forest to a less-than-significant level.

3. **Less than significant with mitigation**. The riverine wetland could be indirectly affected by the movement of vehicles through the wetland or the removal of vegetation during construction in the adjacent upslope area. State and federal agencies would require avoidance, minimization, and compensatory mitigation for the loss of riverine wetland habitat. The loss or disturbance of riverine wetland habitat is considered significant because it is likely under USACE jurisdiction, and the habitat provides a variety of important ecological functions and values. Implementation of Mitigation Measure Bio-10 would require avoidance of this feature and would reduce this potential impact to a less-than-significant level.

Construction of the proposed project would result in direct impacts in the Kings River. Bridge construction would require the placement of fill and installation of culverts during construction to divert streamflow around new foundations; this could include placement of fill to widen the existing island for foundation installation. A total of six new foundations, each approximately 8 feet in diameter, will be placed within the Kings River channel for an estimated total of 402 square feet, or 0.01 acre, of permanent fill. Table 3-7 lists the extent of direct impacts (fill) anticipated in the Kings River based on the proposed bridge footing size (permanent fill) and the proposed extent of the culverts and falsework (temporary fill). For this analysis, temporary fill areas are assumed to include all of the area under the existing bridge.

Additional indirect impacts caused by sedimentation could occur in portions of the river outside the project footprint. The impact areas are preliminary, pending USACE verification of the OHWM for the Kings River and the specific design of the culverts and falsework proposed for project construction.

**Table 3-7.** Direct Impacts on the Kings River in the Study Area

| Area of Temporary Fill (acres)[a] | Area of Permanent Fill (acres)[b] | Total Direct Impacts (Temporary and Permanent) |
|---|---|---|
| 0.57 | 0.01 | 0.58 acre |

[a] Includes temporary fill for culvert or island widening and falsework.

[b] Includes permanent fill for bridge structures.

Natural streams are considered waters of the United States and are protected under CWA Section 404. Placement of material in these areas, including culverts, falsework, substrate for island widening, and bridge foundations, would be considered placement of fill within waters of the United States. This activity

would require Section 404 authorization from the USACE and CWA Section 401 water quality certification from the RWQCB.

A Streambed Alteration Agreement (SAA) from CDFG would be required for construction activity within the Kings River and its floodplain, and a land lease agreement would be required from the State Lands Commission (Young pers. comm.).

Implementation of the avoidance, minimization, and compensation measures described in Mitigation Measures Bio-11, 12, and 13 would reduce potential impacts to the Kings River to a less-than-significant level.

4, 6. **Less than significant with mitigation**. Construction of the Project could affect, either directly or through habitat modification, special-status wildlife species including VELB, western pond turtle, white-tailed kite, and Swainson's hawk, other non-special-status migratory birds and raptors, bridge nesting swallows, and bat roosts. Construction of the project would not impact special-status plants. Potential impacts associated with wildlife species are discussed in more detail below.

### Construction-Related Impacts on Valley Elderberry Longhorn Beetle

VELB, a federally listed threatened species, is closely associated with blue elderberry (*Sambucus mexicana*), an obligate host for beetle larvae. Elderberry shrubs with a stem diameter of 1 inch or more at ground level are considered suitable habitat for VELB. The presence of exit holes in elderberry stems indicates previous use by VELB (Barr 1991). Numerous CNDDB (2007) records for VELB occur within 10 miles of the project area, the closest just under 1 mile from the project area. Suitable habitat for VELB (i.e., elderberry shrubs) was identified in the project area and consequently an elderberry shrub survey was conducted for shrubs located within 100 feet of the project area.

Twelve elderberry shrubs were identified within the direct impact area and will be removed prior to construction. Thirty-one additional shrubs (EB 13–43) are located outside of the direct impact area but within 100 feet of this area. None of these shrubs were observed to contain VELB exit holes.

Elderberry shrubs located within 100 feet of project construction are considered by USFWS to be susceptible to indirect effects resulting from noise or dust. These shrubs are unlikely to be indirectly affected by project construction due to the following reasons.

- The project area will be watered down, as necessary, to prevent dirt from becoming airborne and accumulating on elderberry shrubs in and adjacent to the project area.
- Shrubs are located in a dense riparian forest and would most likely not be exposed to dust created by the project.
- Shrubs are located near a road with high levels of traffic associated with existing moderate to high levels of noise.

- No work will occur within the driplines of these shrubs.
- Project construction and associated activities will occur only within designated areas and will remain outside of the "no disturbance" buffer.

Tables 3-8, 3-9, and 3-10, below, show the survey results for all shrubs within 200 feet of the project area and list impacts on elderberry shrubs within and adjacent to the project area.

**Table 3-8.** Results of the Valley Elderberry Longhorn Beetle Survey within Direct Impact Area

| Elderberry Shrub/ Cluster Number | Number of Stems > 1 Inch and < 3 Inches | Number of Stems > 3 Inches and < 5 Inches | Number of Stems 5 Inches | Total Number of Stems | Estimated Height (feet) |
|---|---|---|---|---|---|
| Riparian | | | | | |
| EB 1 | | | 1 | 1 | 15 |
| EB 2 | 1 | | | 1 | 3 |
| EB 3 | 2 | | | 2 | 3 |
| EB 4 | | 1 | | 1 | 15 |
| EB 5 | | | 1 | 1 | 20 |
| EB 6 | | 1 | | 1 | 3 |
| EB 7 | | 1 | | 1 | 5 |
| EB 8 | | | 1 | 1 | 10 |
| EB 9 | | 2 | | 2 | 10 |
| EB 10 | 1 | | | 1 | 8 |
| EB 11 | 1 | | | 1 | 3 |
| EB 12 | 1 | | | 1 | 10 |
| Total | 6 | 5 | 3 | 14 | N/A |

**Table 3-9.** Results of the Valley Elderberry Longhorn Beetle Survey within Potential Indirect Impact Area (within 100 Feet of Project Construction Activities)

| Elderberry Shrub/Cluster Number | Number of Stems > 1 Inch and < 3 Inches | Number of Stems > 3 Inches and < 5 Inches | Number of Stems > 5 Inches | Total Number of Stems | Estimated Height (feet) |
|---|---|---|---|---|---|
| **Riparian** | | | | | |
| EB 13 | | | 1 | 1 | 20 |
| EB 14 | | | 1 | 1 | 25 |
| EB 15 | 1 | 1 | | 2 | 15 |
| EB 16 | | | 1 | 1 | 15 |
| EB 17 | 2 | | | 2 | 10 |
| EB 18 | | 1 | | 1 | 8 |
| EB 19 | | 1 | | 1 | 8 |
| EB 20 | 1 | | | 1 | 7 |
| EB 21 | | | 1 | 1 | 10 |
| EB 22 | | 1 | | 1 | 8 |
| EB 23 | | | 1 | 1 | 10 |
| EB 24 | | | 1 | 1 | 10 |
| EB 25 | 1 | | | 1 | 8 |
| EB 26 | 1 | | | 1 | 8 |
| EB 27 | 1 | | | 1 | 8 |
| EB 28 | | | 1 | 1 | 10 |
| EB 29 | | | 1 | 1 | 12 |
| EB 30 | 1 | | | 1 | 3 |
| EB 31 | 1 | | | 1 | 4 |
| EB 32 | | | 1 | 1 | 22 |
| EB 33 | | | 1 | 1 | 25 |
| EB 34 | 1 | | | 1 | 8 |
| EB 35 | | | 1 | 1 | 20 |
| EB 36 | | | 1 | 1 | 25 |
| EB 37 | 1 | | 1 | 2 | 15 |
| EB 38 | | 1 | 1 | 2 | 15 |
| EB 39 | | | 1 | 2 | 17 |
| EB 40 | 2 | 1 | | 3 | 8 |
| EB 41 | 1 | | | 1 | 8 |
| EB 42 | 1 | | | 1 | 8 |
| Subtotal | 15 | 6 | 15 | 37 | |
| **Nonriparian** | | | | | |
| EB 43 (clump) | 1 | 2 | 2 | 5 | 20 |
| Subtotal | 1 | 2 | 2 | 5 | N/A |
| Total | 22 | 13 | 20 | 56 | N/A |

**Table 3-10.** Type of Impact on Elderberry Shrubs within and adjacent to the Project Area

| Elderberry Shrub/Cluster Number | Type of Impact |
|---|---|
| **Riparian Habitat within Construction Area** | |
| EB 1–EB 12 | Direct |
| **Riparian Habitat within 100-Foot Buffer Outside the Construction Area** | |
| EB 13–EB 42 | None |
| **Nonriparian Habitat within 100-Foot Buffer Outside the Construction Area** | |
| EB 43 | None |

Impacts to VELB would be considered significant. Implementation of Mitigation Measures BIO-1 and 2 would reduce this potential impact to a less-than-significant level.

### Construction-Related Impacts to Western Pond Turtle

The proposed project would result in the following impacts.

- Permanent loss of approximately 0.01 acre of aquatic habitat for western pond turtles. This habitat would be lost as a result of construction of six new bridge foundations within the Kings River OHWM.
- A minimal amount of suitable upland habitat, including riparian and grassland habitats, would be permanently removed adjacent to the existing bridge within the footprint of the new bridge outside the Kings River OHWM. Disturbance within the construction zone for construction staging and temporary access roads would also be minimal, and all disturbed areas would be available to turtles in the long term because they would be revegetated after the project completion.

Impacts on western pond turtle are considered minimal because the amount of aquatic habitat that would be affected would be very small, and impacts on upland habitat would be temporary. Though the potential is low, direct harm to a western pond turtle would be considered a significant impact. Implementation of Mitigation Measure Bio-3 would reduce this potential impact to less than significant.

### Construction-Related Impacts on Nesting White-Tailed Kite, Swainson's Hawk, and Non-Special-Status Migratory Birds, Including Raptors

Implementation of the proposed project could affect special-status and non-special-status nesting migratory birds, including raptors, if construction activities remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in the death of young or loss of reproductive potential would violate MBTA and CDFG codes 3503 and 3503.5 and would be considered significant impacts. Implementation of Mitigation Measure Bio-4 would reduce potential impacts to a less-than-significant level.

### Construction-Related Impacts on Bridge Nesting Swallows

Vibrations, noise, and activities associated with bridge modifications could disturb nesting swallows. Swallows could be affected by the proposed project if construction activities occur between March 1 and September 1 (the nesting season). Disturbance to nesting swallows resulting in nest failure or the loss of eggs or young would be considered a significant impact. Implementation of Mitigation Measure Bio-5 would reduce potential impacts to a less-than-significant level.

### Construction-Related Impacts on Bridge Roosting Bats

The proposed project would involve the replacement of both the northern and southern halves of the bridge with a new bridge. The project would therefore require the removal of occupied maternal roosting habitat. The bridge may also be used as night- and/or day-roosting habitat during the fall and winter seasons by the same or different species. Exclusion devices will be implemented in the nonbreeding season to prevent maternal roosting bats from beginning a maternal roost prior to construction. This will ensure that there will be no direct impacts on an active roost as a result of construction. The optimum time period for placement of the exclusion devices is late August, which is outside of the breeding and winter hibernation seasons. The replacement of the bridge will require the removal of the existing bat roosting habitat, which will affect roosting bats through habitat modification. This impact is expected to be temporary because the new bridge will include a bat-friendly bridge design.

Long-term impacts on the bat colony would occur if permanent alterations to the existing bridge prevent either nursery or hibernation bat roosting. Permanent loss of the bridge as a suitable bat roosting site or impacts to a roosting colony during the breeding or hibernation season would be considered significant impacts. Implementation of Mitigation Measure Bio-6 and 7 would reduce potential impacts to bat roosts to a less-than-significant level.

5. **Less than significant with mitigation**. There are no local, regional, or state habitat conservation plans or natural community conservation plans known to cover the Project area with the exception of the Kings River Corridor Specific Plan. The proposed project does not conflict with the goals and policies related to biological resources in the Kings River Corridor Specific Plan. The project would have effects on native vegetation, however, implementation of Mitigation Measures BIO-8, 9, and 12, would reduce effects to less-than-significant levels.

7. **No impact**. The proposed project would not change pedestrian or vehicular access to the Kings River.

# Mitigation Measures

### Mitigation Measure BIO-1: Avoid and Minimize Potential Impact to VELB

**a) Conduct a Biological Resources Education Program for Construction Crews**

A qualified biologist, under contract to the City, will conduct an environmental education program for construction employees on the importance of onsite biological resources, including special-status species. The environmental education program will be provided to all construction personnel to brief them on the need to avoid impacts on VELB and the penalties for not complying with biological mitigation requirements. The biologist will inform all construction personnel about the life history of VELB, the importance of elderberry shrubs as habitat for VELB, and the terms and conditions of the biological opinion. Proof of this instruction will be submitted to the USFWS Sacramento Field Office.

The program will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive species during project implementation. The crew foreman will be responsible for ensuring that crewmembers adhere to the guidelines and restrictions. Educational programs will be conducted for appropriate new personnel as they are brought on the job during the construction period. Restrictions and guidelines that must be followed by construction personnel are listed below.

Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the project area.

Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.

All food-related trash will be disposed of in closed containers and removed from the project area at least once a week during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the project area.

No pets or firearms will be allowed in the project area.

To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.

Any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped will immediately report the incident to the biological monitor. The monitor will immediately notify Caltrans, which will provide verbal notification to the USFWS Endangered Species Office and the local CDFG warden or biologist within three working days. Caltrans will follow up with written notification to USFWS and CDFG within five working days. The biologist will also notify USFWS of any unanticipated harm to VELB or elderberry shrubs associated with the proposed project. All observations of VELB (live, injured, or dead) or fresh beetle exit holes will be recorded on CNDDB field sheets and sent to CDFG.

**b) Fence Elderberry Shrubs to Be Protected**

A qualified biologist, under contract to the City, will mark the elderberry shrubs that will be protected during construction. Thirty-one elderberry shrubs (EB 13–43) within 100 feet of the direct impact area will be protected by a buffer area

and barrier fencing (Figure 3-2). Elderberry clumps/shrubs outside of this buffer area will not be fenced because they will be located well outside the construction area; no construction activities will occur outside the direct impact area. Elderberry shrubs 13–43 will be protected with a minimum 20-foot buffer from the dripline of each shrub. No construction activities will be permitted within the buffer zone, other than those activities necessary to erect the fencing. Signs will be posted every 50 feet along the perimeter of the buffer area fencing. The signs will contain the following information:

*This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.*

Temporary fences will be installed around the elderberry shrubs as the first order of work. Temporary fences will be furnished, constructed, maintained, and later removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. Temporary fencing will be at least 4 feet high and made of commercial-quality woven polypropylene, orange in color (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts set at maximum intervals of 10 feet.

**c) Inspect Buffer Area Fences during Construction**

A qualified biologist, under contract to the City, will inspect the buffer area fences around elderberry shrubs/clumps weekly during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs in the project area and the 100-foot buffer area. Biological inspection reports will be provided to the City, Caltrans, and the USFWS.

**d) Water Down Construction Areas to Control Dust in the Vicinity of Elderberry Shrubs**

The City, or its contractor, will ensure that the project area will be watered down as necessary to prevent dirt from becoming airborne and accumulating on elderberry shrubs in and adjacent to the project area. Dust control is a standard item required of contractors during highway construction.

### Mitigation Measure BIO-2: Compensate for Direct and Indirect Effects on VELB Habitat

Several of the 12 elderberry shrubs within the direct impact area are in poor condition (high amount of dead growth and severely leaning) and would most likely not survive transplantation. These shrubs will be removed prior to construction, and, as directed by Jeff Jorgenson of USFWS in a October 24, 2007 phone conversation, unhealthy shrubs that would not be directly impacted by physical damaged due to construction but would be in close proximity to construction, such that their driplines would fall within the construction area, could be left alone. Still, the USFWS would have to approve impeding on the typical minimum protection barrier of 20 feet for these shrubs. Unhealthy shrubs

that would be directly impacted by construction should be attempted to be transplanted to a USFWS-approved conservation area and their survival monitored. Elderberry seedlings or cuttings and associated native species will also be planted in the conservation area.

The relocation of the elderberry shrubs will be conducted according to the USFWS-approved procedures outlined in the USFWS guidelines (U.S. Fish and Wildlife Service 1999). USFWS will be provided with a map and written details identifying the conservation area before the mitigation program is initiated. The City and Caltrans must receive approval from USFWS that the conservation area is acceptable. Healthy elderberry shrubs within the project area that cannot be avoided will be transplanted during the plant's dormant phase (November through the first 2 weeks of February). A qualified biological monitor will remain on site while the shrubs are being transplanted.

Evidence of VELB occurrence in the conservation area, the condition of the elderberry shrubs in the conservation area, and the general condition of the conservation area itself will be monitored over a period of 10 consecutive years or for seven years over a 15-year period from the date of transplantation. The City will be responsible for funding and providing monitoring reports to Caltrans and USFWS in each of the years in which a monitoring report is required. This could be accomplished by purchasing mitigation credits at a full-service USFWS-approved mitigation bank. As specified in the guidelines, the report will include information on timing and rate of irrigation, growth rates, and survival rates and mortality. To meet the success criteria specified in the guidelines, a minimum survival rate of 60% of the original number of elderberry replacement plantings and associated native plants must be maintained throughout the monitoring period. Within one year of discovery that survival has dropped below 60%, the applicant must replace failed plantings to bring survival above this level. The USFWS would then make a determination as to the applicant's replacement responsibilities.

Twelve elderberry shrubs will be removed as part of bridge construction, and shrubs will be transplanted as described above. In addition to transplanting shrubs, the guidelines require that each elderberry stem measuring 1 inch or greater in diameter at ground level that is directly or indirectly affected to be replaced in a conservation area with elderberry seedlings or cuttings at ratios between 1:1 and 8:1. The ratio used is based on whether or not the shrub is located in riparian or nonriparian habitat, the diameters of the elderberry stems, and whether or not VELB exit holes are present. Replacement of the bridge will directly affect 12 elderberry shrubs having a combined total of 14 stems measuring 1 inch or more in diameter. A total of 39 elderberry seedlings or cuttings would be planted at the conservation area (Table 3-11). Elderberry cuttings or seedlings and native plants will be obtained from local sources or from an approved plant donor site.

A mix of native plants associated with the elderberry shrubs at the project site will be planted in the conservation area at a ratio of 1:1 or 2:1. The ratio used depends on whether or not the transplanted shrub contains VELB exit holes. A mixture of native grasses and forbs from local stock will also be planted along

with the native trees. The conservation area will be at least 1.65 acre in size to accommodate the 12 elderberry shrubs, 39 elderberry cuttings or seedlings, and 39 native plants. The conservation area in which the transplanted elderberry shrubs and seedlings are planted will be protected in perpetuity as habitat for VELB.

**Table 3-11.** Required Compensation for VELB

| Habitat | Stem Diameter | Number of Stems | Exit Holes (Y/N) | Seedling Ratio | Native Plant Ratio | Total Seedlings | Total Native Plants |
|---|---|---|---|---|---|---|---|
| Riparian | Stems > 1 inch to < 3 inches | 6 | N | 2:1 | 1:1 | 12 | 12 |
| | Stems > 3 inches to < 5 inches | 5 | N | 3:1 | 1:1 | 15 | 15 |
| | Stems > 5 inches | 3 | N | 4:1 | 1:1 | 12 | 12 |
| Total | | 14 | None | NA | NA | 39 | 39 |

**Mitigation Measure BIO-3: Conduct Preconstruction Surveys for Western Pond Turtle and Construct Exclusion Fencing, If Needed**

In April or May, before construction, a qualified biologist, under contract to the City of Reedley, will conduct a survey for western pond turtles along the Kings River. The survey will encompass the project area and an area 0.25 mile upstream and downstream of this area. The purpose of this survey is to determine whether turtles are using the creek during the period when they are most likely to be observed. If turtles are observed, "a" and "b" below will be implemented. If turtles are not observed, only "b" will be implemented.

a. If western pond turtles are observed during the spring survey, fences will be constructed upstream and downstream of the project area to prevent turtles from entering the construction area. The fences will be constructed 150 feet beyond the limit of construction or attached to right-of-way fencing. The fences will be perpendicular to the river and will extend 200 feet from the center of the river on each side. Turtles will be moved downstream of the project area, outside the barrier fences, by a qualified biologist in accordance with an MOU from CDFG before construction begins. Turtles will be excluded from the construction area between July and October to prevent them from seeking hibernation sites within the construction area. If construction takes place over two seasons, the fencing will be removed at the end of the first season and replaced the following season. If construction takes place over one season, the fencing will be left in place the entire time.

b. Before the Kings River is dewatered and there is any activity within the flowing river, a qualified biologist will conduct a preconstruction survey for western pond turtles within the project area. This survey will be conducted 24 hours before construction activities begin. If a turtle is found in the construction area, the biologist will try to passively move the turtle downstream of the construction area or to outside the barrier fence, if constructed (see "a" above). If barrier fences have not been installed, the

biologist will return to the construction site the following day to ensure that the turtle has not moved back into the construction area.

### Mitigation Measure BIO-4: Conduct Construction Activities During Nonbreeding Season for Special-Status Raptors, Non-Special-Status Raptors, and Other Migratory Birds or Retain a Qualified Biologist to Conduct a Nesting Bird Survey before Construction Activities

To avoid impacts on active sensitive and non-sensitive migratory bird nests protected under the MBTA and CDFG code, construction activities, including grading, clearing and tree and shrub removal activities, will be conducted during the nonbreeding season for migratory birds (generally August 16 through February 28) or after a qualified biologist determines that fledglings have left the nest.

If construction activities will be conducted before August 16 or after February 28, a qualified biologist will be retained to survey for nesting birds in all trees (and shrubs) that will be removed and any tree (or shrub) located within 500 feet (0.25 mile for Swainson's hawk) of construction activities, including grading. The nesting bird survey will be conducted no more than 48 hours before tree (and shrub) removal activities. If the biologist determines that the area surveyed does not contain active nests, tree (and shrub) removal activities can commence without any further mitigation. If active nests are found, construction will not occur until nesting activities have ceased (after a qualified biologist determines that fledglings have left the nest).

If a Swainson's hawk nest site is found, consultation with the CDFG will be required to ensure that project initiation will not result in nest disturbance. Removal of Swainson's hawk nest trees will be avoided. A "no-disturbance" buffer will be established for an active nest that is located on or within 0.25 mile of the project area for the time the nest remains active. No construction will be allowed within this exclusion area without consultation with CDFG. A qualified wildlife biologist will monitor the nest site at least once a week to ensure that the nest site is not disturbed and the buffer is maintained. If the nest tree cannot be avoided, the nest tree must be removed when nests are unoccupied (between September 16 and February 28), with consent from CDFG.

### Mitigation Measure BIO-5: Restrict Construction Activities that Could Disturb Nesting Swallows to the Non-Breeding Season or Remove Nests During Non-Breeding Season

To the extent possible, Caltrans, the City, or the contractor will limit construction activities that could potentially disturb nesting swallows to the period outside the breeding season for this species (the nonbreeding season is August 1 to March 1).

If construction activities are to occur during the swallows' breeding season, the following measures will be implemented:

Hire a qualified biologist to inspect the underside of the bridge during the swallows' nonbreeding season. Nests that are abandoned may be removed during this time only. To avoid damaging active nests, nests must be removed

before the breeding season occurs (March 1). A permit from CDFG and USFWS is required if active nests are to be removed.

After nests are removed, cover the underside of the viaduct with a 0.5- to 0.75-inch-mesh net, poultry wire, or other CDFG-approved swallow exclusion device. All devices will be installed before March 1. The device must be anchored so swallows cannot attach their nests to the bridge through gaps in the device. An alternative to netting is to continually hose down inactive nests until construction occurs. If netting of the viaduct does not occur by March 1 and swallows colonize the bridge, modifications to these structures will not begin before August 1 or until the young have fledged and all nest use has been completed.

If steps are taken to prevent swallows from constructing new nests, work can proceed at any time of the year, notwithstanding other restrictions specified in the mitigation measures identified above and in City ordinances.

### Mitigation Measure BIO-6: Avoid Impacts to Bats Roosts Using Bat Exclusion Devices

As currently proposed, bridge construction would occur during the bat breeding season. A breeding-season survey was conducted in July 2007, which identified maternal roosting bats at the bridge. Nonbreeding-season surveys were not conducted; therefore, it is not known if the bridge is being used as winter hibernation habitat. Hibernation roosts are not well known in bridge structures, possibly due to airflow dynamics and the limited thermal mass of bridges as compared to caves or mines (Erickson 2002). Though there is limited information on the suitability of bridges as hibernation habitat, there is the potential for hibernating bats to use the bridge for winter hibernation. Thus, in order to avoid direct impacts on both maternal roosting bats and potential hibernating bats, bat exclusion will be implemented in late August as recommended in *California Bat Mitigation—Techniques, Solutions, and Effectiveness* (H. T. Harvey and Associates 2004).

Exclusion involves installing one-way devices that allow bats to exit the roost but not to return. To implement an exclusion, all primary exit points are first identified and marked. All other emergence points larger than 0.25 inch are sealed with suitable material such as steel wool, wood, backer rod, expanding foam, or caulk. Access to unused portions of long crevices can also be minimized by sealing them with these materials. One-way valves are then placed over the primary exit points to prevent re-entry. Simple one-way valves can be constructed using wire mesh cones, polyvinyl chloride (PVC), and strips of clear plastic sheeting attached over exit points.

Once the bats have been excluded, roosts spaces can be permanently filled with a suitable substance. Care should be taken to avoid sealing bats into a roost, particularly during the maternity season when non-flying young are present. To ensure that bats do not become trapped in the roost, a bat survey should be conducted from just before dark until complete darkness prior to sealing the roosting habitat.

### Mitigation Measure BIO-7: Replace Bat Roosting Habitat by Using Bat-Friendly Bridge Design

Implementation of the following bat-friendly designs would avoid long-term impacts on nursery or hibernation bat roosts by providing suitable replacement habitat to accommodate the existing bat colony. Off-structure mitigation for bats on bridges has been marginally or not at all effective and is not considered adequate mitigation for the loss of roosting habitat at Manning Avenue Bridge (H. T. Harvey and Associates 2004).

The following basic design recommendations (H. T. Harvey and Associates 2004) should serve as general guidance only. Final design of these structures will depend on the final bridge design.

### Bridge Design—Two Separate Box Girder Roadways

**Two-inch-thick, cast, lightweight concrete panels mounted on spacers on the two facing exterior box girder surfaces.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. They should extend down at least 36 inches (up to 72 inches, if possible). The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

This mitigation will provide primarily day-roost habitat but will not replace night-roost habitat lost with the box girder replacement design.

### Bridge Design—Two Separate Bulb T-Girder Roadways

**Two-inch-thick, cast, lightweight concrete panels mounted on vertical surfaces of selected bulb T-girders.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. Panel height should be at least 24 inches, although 36 inches or more is preferable. The bottom, open portion of the panel will be mounted at least 12 inches above the girder bulb to permit unrestricted ingress/egress. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

This design will provide primarily day-roost habitat. To replace lost night-roost habitat, lateral interstices between bulb T-girders should be designed, such as where the girders rest on pier platforms, to create pockets similar to those found in the existing bridge that trap warm air.

### Bridge Design—Single-Width Box Girder Design of Two Sections with Closure Pour

**Two-inch-thick, cast, lightweight concrete panels mounted on spacers for one or both of the vertical surfaces of the closure pour.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. They should extend down at least 36 inches (up to 72 inches, if possible). The gap created by

mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

**Hanging, cast, lightweight, concrete single-crevice sections mounted on the ventral surface of the closure pour**. These should be installed centrally along the axis of the closure pour. They should extend down at least 36 inches (or farther, if possible). The total roost area should replicate that available in the existing bridge.

These designs will provide primarily day-roost habitat. They will probably replace only a small percentage of the existing night-roost habitat lost with the box girder replacement design. To replace lost night-roost habitat, lateral interstices should be designed into the closure pour to create pockets similar to those found in the existing bridge that trap warm air.

### Bridge Design—Single-Width Bulb T-Girder Roadways with Closure Pour

**Two-inch-thick, cast, lightweight concrete panels mounted on vertical surfaces of selected Bulb T-Girders.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. Panel height should be at least 24 inches, although 36 inches is preferable. The bottom, open portion of the panel will be mounted at least 12 inches above the girder bulb to permit unrestricted ingress/egress. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

**Hanging, cast, lightweight, concrete single-crevice sections mounted on the ventral surface of the closure pour.** These should be installed centrally along the axis of the closure pour. They should extend down at least 36 inches (or farther, if possible). The total roost area should replicate that available in the existing bridge.

These designs will provide primarily day-roost habitat. To replace lost night-roost habitat, lateral interstices between bulb T-girders should be designed, such as where girders rest on pier platforms, to create pockets similar to those found in the existing bridge that trap warm air.

Upon implementation of the chosen bat-friendly design, the structure(s) should be surveyed for night emergence just following construction during both the early and late breeding seasons (May to June and mid-July to mid-August). These surveys will provide information on the efficacy of the design and insights into adaptive management, which may be required to correct problems with the replacement habitat.

### Mitigation Measure BIO-8: Reduce Impacts to Riparian Forest

**a) Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources to Be Avoided**

The City of Reedley or its contractor will install orange construction barrier fencing to identify environmentally sensitive areas. A qualified biologist will identify sensitive biological habitat at the bridge site before the final design plans are prepared so that the areas to be fenced can be included in the plans. The pockets within this area that are to be avoided during construction should be fenced off to avoid disturbance. Sensitive biological habitat that occurs adjacent to the construction area includes the Kings River, the riverine wetland, native trees, elderberry shrubs, and any trees that support nests of special-status bird species.

Before construction, the construction contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the sensitive resource sites (i.e., the river, riverine wetland, native trees, elderberry shrubs, trees that support nests of special-status birds) to indicate these locations. The protected areas will be designated as environmentally sensitive areas and identified clearly on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following paragraph will be included in the construction specifications:

*The contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized in writing by the City of Reedley. The contractor will take measures to ensure that his/her forces do not enter or disturb these areas, including giving written notice to employees and subcontractors. Vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive areas.*

Temporary fences will be installed around the environmentally sensitive areas as one of the first orders of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts set at maximum intervals of 10 feet.

**b) Retain a Biological Monitor to Conduct Weekly Visits during Construction in or near the Kings River**

The City of Reedley will retain a biologist to conduct weekly construction monitoring in and adjacent to the Kings River. The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines. The biological monitor also will be responsible for ensuring that the contractor maintains the staked and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources.

**c) Avoid and Minimize Potential Indirect Disturbance of Riparian Communities**

To the extent possible, the City will avoid and minimize potential indirect disturbance of riparian communities by implementing the following measures.

The potential for long-term loss of riparian vegetation will be minimized by trimming vegetation rather than removing entire trees or shrubs. Trees or shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Cutting will be allowed only in areas that do not provide habitat for sensitive species. To protect nesting migratory birds, the City will not allow pruning or removal of woody riparian vegetation between March 1 and August 15 without a preconstruction nesting season survey to determine if active migratory bird nests are present.

A certified arborist will be retained to perform any necessary pruning or root cutting of riparian trees.

The areas that undergo vegetative pruning and tree removal will be inspected immediately before construction, immediately after construction, and 1 year after construction to determine the amount of existing vegetative cover, cover that has been removed, and cover that resprouts. If after 1 year these areas have not resprouted sufficiently to return the cover to the pre-project level, the City of Reedley or its contractor will replant the areas with the same species to reestablish the cover to the pre-project condition.

Work in riparian areas will be conducted between June 1 and October 1, and disturbed areas will be stabilized with erosion control measures before October 1.

### Mitigation Measure BIO-9: Compensate for Permanent Loss of Riparian Vegetation

The City of Reedley will compensate for the permanent loss of riparian vegetation at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre permanently affected). This ratio will be confirmed through coordination with state and federal agencies as part of the permitting process for the proposed project. Compensation in this area could be easily achieved through onsite enhancement of 0.13 acre within and adjacent to the project area. The riparian area on the southwest side of the existing bridge could be enhanced by planting native woody species, including valley oak, Fremont's cottonwood, arroyo willow, and black willow or other readily establishing native riparian species.

Plantings will consist of cuttings taken from local plants or plants grown from local material obtained from the nearby Kings River riparian corridor. Plantings will be monitored annually for 3 years or as required in the project permits. A minimum of 75% of the plantings will survive at the end of the monitoring period. If this survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated until the survival criterion is met.

### Mitigation Measure BIO-10: Avoid and Minimize Potential Indirect Disturbance of the Riverine Wetland

The City of Reedley will minimize the potential for indirect disturbance of the riverine wetland in the project area by prohibiting the movement of vehicles and equipment in the wetland. All river access by vehicle will avoid the wetland.

The potential for sedimentation in the wetland will be avoided by prohibiting the removal of vegetation upslope of the wetland.

### Mitigation Measure BIO-11: Protect Water Quality and Prevent Erosion in the Kings River

To protect water quality in the Kings River, the City of Reedley will implement the following best management practices (BMPs) before and during construction.

- All earthwork or foundation activities in the river will be limited to the low-flow period, as much as is feasible.
- Equipment used in and around the river will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance, staging, and materials storage will occur at least 300 feet from the river. Any necessary equipment washing will occur where the water cannot flow into the river channel.
- Any surplus concrete rubble, asphalt, or other rubble from construction will be taken to an approved landfill.
- An erosion control plan will be prepared and implemented for the proposed project. It will include the following provisions and protocols:
  - Discharges from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the RWQCB.
  - Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. The contractor will surround all stockpile areas with a filtering fabric fence and interceptor dike.
  - Erosion control measures will be applied throughout construction of the proposed project. The stormwater pollution prevention plan (SWPPP) for the project will detail the applications and types of measures and the allowable exposure of unprotected soils.
  - Soil exposure will be minimized through the use of temporary BMPs, groundcover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid runoff. Paved streets will be swept daily following construction activities.
  - The contractor will conduct periodic maintenance of erosion and sediment control measures.
  - All temporary erosion and sediment control measures will be removed after the working area is stabilized or as directed by the engineer.
  - An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction.
- Sandbagged silt fences will be installed both upstream and downstream of the construction site. Any accumulated sediment will be removed and trucked to an approved landfill or disposal site.

### Mitigation Measure BIO-12: Obtain Required Permits, Authorizations, Certifications, and Agreements

Before construction, the City will obtain the following necessary regulatory authorizations including, but not limited to:

- Clean Water Act, Section 401: Water Quality Certification;
- Clean Water Act, Section 404: Placement of Fill;
- Endangered Species Act, Section 7: Biological Opinion
- Land Use Agreement (lease); and
- California Fish and Game Code, Section 1602.

All conditions that are attached to the state and federal permits will be implemented as part of the project. The conditions will be identified clearly in the construction plans and specifications and monitored during and after construction to ensure compliance.

### Mitigation Measure BIO-13: Compensate for Permanent and Temporary Loss of Open Water Habitat

The City will compensate for the permanent fill of other waters of the United States (a direct impact associated with bridge foundations) in the Kings River at a minimum ratio of 2:1 (2 acres restored or created for every 1 acre permanently affected). Because the proposed project will result in the permanent loss of 0.01 acre of other waters of the United States (Table 3-7), a minimum of 0.02 acre of compensation will be required. Compensation could be accomplished by restoring and/or enhancing riparian and in-stream habitats in the project area. Compensation for other waters of the United States will be in addition to and will follow the guidelines for riparian habitat compensation described in mitigation measure BIO-9.

The approximate 0.57 acre of the river that will be temporarily filled for placement of stream diversions and falsework during construction will be returned to original grade following construction and will result in no permanent impacts. No additional mitigation is proposed for the temporarily filled areas in the Kings River.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **V.** | **CULTURAL RESOURCES.** The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if it will: | | | | |
| 1. | Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in Section 15064.5. | ❑ | ■ | ❑ | ❑ |
| 2. | Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. | ❑ | ■ | ❑ | ❑ |
| 3. | Disturb any human remains, including those interred outside of formal cemeteries. | ❑ | ■ | ❑ | ❑ |

The following cultural resources setting discussion and impact evaluation is summarized from the Historic Property Survey Report prepared for the proposed project (City of Reedley 2008c).

# Setting

The proposed project is situated in the City of Reedley, on the eastern margin of the San Joaquin Valley. Little archaeological research has been conducted in the immediate environs of Reedley. Expectations regarding the types of prehistoric property in the APE and the prehistoric lifeways manifest in the area therefore must be made by reference to archaeological research conducted further afield.

Efforts to locate cultural resources within the project area consisted of conducting a cultural resources records search, conducting additional historical research, and conducting a cultural resources field investigation. On July 30, 2007 an ICF Jones & Stokes archaeologist requested a records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System located at California State University, Bakersfield.

SSJVIC staff provided the records search on September 17, 2007 (RS# 04-336). The search of records housed at SSJVIC was specific to the archaeological APE and a surrounding 1.6-km radius. Sources consulted by SSJVIC staff researchers included maps of previous cultural resource studies and known cultural resource locations. SSJVIC staff also consulted the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), *California Inventory of Historic Resources* (California Department of Parks and Recreation

1976), *California Historical Landmarks* (California Department of Parks and Recreation 1996), California Points of Historical Interest (May 1992 and updates), and the Historic Property Data File for Fresno County (August 2, 2004).

The records search indicated no previous cultural resources studies have been conducted within the APE. There have been 11 cultural resources surveys conducted within a 1.6-km radius of the APE. The records search identified no recorded archaeological sites in the APE or within a 1.6-km radius of the APE. There are 17 recorded buildings on file within a 1.6-km radius of the APE. The recorded buildings are clustered at the intersection of Frankenwood Avenue and Manning Avenue in the City of Reedley.

ICF Jones & Stokes contacted the Native American Heritage Commission (NAHC) on August 8, 2007, to request a search of its Sacred Lands File and a list of local Native American representatives that might have any information or concerns regarding the project. On August 9, 2007, the NAHC indicated via facsimile transmission that the Sacred Lands File contained no record of Native American cultural resources in the APE. The NAHC also provided Jones & Stokes with a list of 10 Native American representatives. Jones & Stokes sent letters to those representatives listed on August 9, 2007. The letters included a brief project description and a map of the project area and requested that the recipient respond with any information or concerns. Follow-up telephone calls were made on September 4, 2007. As of June 17, 2008, ICF Jones & Stokes has not received any replies from Native American representatives.

## Field Investigation

An archaeological and architectural survey of the APE was conducted on June 20, 2007. An ICF Jones & Stokes archaeologist inspected unpaved ground surfaces throughout the proposed project area. No archaeological resources were identified as a result of the survey. An ICF Jones & Stokes architectural historian surveyed the project. No historic resources were identified as a result of the field investigation.

## Historic Setting

Thomas Law Reed settled in the area to provide wheat for miners in the mid 1800s. He donated land for a railroad station site, and this established the town as the center of the San Joaquin Valley's booming wheat business. Railroad officials named the City in his honor. When mining began to abate, wheat demand lessened. Water from the Kings River was diverted for crop irrigation, and agricultural enterprises grew in the region (City of Reedley 2008d).

# Impact Evaluation

1. **Less than significant with mitigation**. There are no historical resources within the project area and therefore there would be no impact. No known archaeological resources were identified within the project area. However, the potential exists for buried archaeological resources (that may meet the definition of historical resource or unique archaeological resource according to CEQA) to be inadvertently unearthed during project construction. Damage to or destruction of such resources is considered a potentially significant impact. Implementation of Mitigation Measure CR-1 would reduce this impact to a less-than-significant level.

2. **Less than significant with mitigation**. No paleontological resources were observed or appear likely to be present. It is possible that remains are buried and would be unearthed during construction activities, though this is unlikely. Implementation of Mitigation Measure CR-1 would reduce this impact to a less-than-significant level.

3. **Less than significant with mitigation**. No known human remains are located within the project area. However, it is possible that construction activities would result in the discovery of subsurface human remains. This potential impact is considered significant. The impact would be reduced to a less-than-significant level by implementation of Mitigation Measure CR-2.

# Mitigation Measures

Implementation of the following mitigation measures would reduce potentially significant impacts to cultural resources to less-than-significant levels.

### Mitigation Measure CR-1: Implement Plan to Address Discovery of Unanticipated Buried Cultural or Paleontological Resources

If buried cultural resources such as chipped or ground stone, midden deposits, historic debris, building foundations, human bone, or paleontological resources are inadvertently discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified archaeologist or paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the District and other appropriate agencies.

### Mitigation Measure CR-2: Implement Plan to Address Discovery of Human Remains

If remains of Native American origin are discovered during project construction, it will be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the NAHC. If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the Fresno County coroner has been informed and has determined that no investigation of the cause of death is required; and
- if the remains are of Native American origin:
  - the most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98, or
  - if the NAHC has been unable to identify a descendant or the descendant failed to make a recommendation within 48 hours after being notified.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100) and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **VI.** | **GEOLOGY AND SOILS.** The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if: | | | | |
| 1. | A preliminary soils investigation reveals that there are unstable soils and site design or building design requirements are not addressed by the Uniform Building code (UBC). | ❑ | ❑ | ■ | ❑ |
| 2. | The project is not consistent with the findings and recommendations of a geotechnical report or Seismic Hazard Zone analysis, should either be required. | ❑ | ❑ | ❑ | ■ |
| 3. | Projects using septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater do not demonstrate by a soils report that soils are capable of adequately supporting the use. | ❑ | ❑ | ❑ | ■ |
| 4. | Direct and indirect impacts associated with onsite grading operations in excess of three feet of cut or fill averaged over an acre, or in excess of 10,000 cubic yards over the entire area. | ❑ | ■ | ❑ | ❑ |

# Setting

## Geology and Soils

The project site is in the Central Valley geomorphic province, which extends approximately 644 kilometers (400 miles) from the Cascades in the north to the Tehachapis in the south; and approximately 104 kilometers (65 miles) from the Coast Ranges in the west to the Sierra Nevada in the east. Elevations in the project area range from 328.6 feet mean sea level (msl) near the western abutment of the existing Manning Avenue Bridge to approximately 335.7 feet msl at the eastern abutment. The existing riverbed of Kings River in the area is approximately 293 feet msl (Parikh Consultants 2007).

The project site is located in eastern Fresno County, in an area consisting largely of Holocene alluvial fan deposits and Pleistocene nonmarine deposits eroded from the foothills of the northern Sierra Nevada to the east (Parikh Consultants 2007). Native soils within the project area are mapped as Hanford fine sandy

loam; Grangeville soils, channeled; and Grangeville sandy loam (Huntington 1971). These soils are moderately to well drained and have a slight erosion potential. No soils that exhibit moderate to severe expansive potential or that contribute to weak soil conditions are known to occur at the project site (City of Reedley 1991).

## Seismicity

There are no active faults (movement within the Holocene period, or the last 11,000 years) within 50 miles of the project vicinity (Parikh Consultants 2007). The closest active faults to the project site are the Independence fault, located approximately 65 miles east of the project area; the Owens Valley fault, located approximately 74 miles east of the project area; and the San Andreas fault, located about 72 miles west of the project area. Based on available geological and seismic information, Parikh Consultants (2007) determined that the site is unlikely to experience strong ground shaking as result of seismic activity in the region.

No liquefaction hazard evaluations consistent with the requirements of the State of California's Seismic Hazards Mapping Act have been conducted in the project vicinity. However, due to the low seismicity of the region, Parikh Consultants (2007) determined that the liquefaction potential of the project site is relatively low.

# Impact Evaluation

1. **Less than significant**. As discussed above, liquefaction is not identified as a potential hazard based on site-specific studies (Parikh Consultants 2007). Furthermore, no soils that exhibit moderate to severe expansive potential, or that contribute to weak soil conditions, are known to occur at the project site. Based on the field and laboratory test data, it is the opinion of the project's geotechnical consultant (Parikh Consultants, Inc.) that the site is suitable for the proposed project, provided that recommendations contained in the geotechnical report are incorporated in the final design and construction of the project. Compliance with the recommendations of the geotechnical report and adherence to the UBC standards for the project area would ensure that the project is constructed to resist stresses developed by earthquakes or any other geologic- or soils-related hazards.

2. **No impact**. It is assumed that the project would be built consistent with the recommendations of the project geotechnical report and City standards. The design of the bridge has been based on the results of the geotechnical report.

3. **No impact**. The project would not include the use of alternative wastewater disposal systems or septic tanks.

4. **Less than significant with mitigation**. Ground-disturbing activities may have the potential to contribute to accelerated erosion, which potentially could impair

surface water or groundwater quality in the region. In order to comply with the requirements of applicable permits under the National Pollutant Discharge Elimination System (NPDES) program, the general contractor(s) selected for project implementation would be required to prepare and implement a SWPPP. The SWPPP would include measures to minimize the potential for accelerated erosion, as discussed in the "Hydrology and Water Quality" section of this IS/MND.

Additionally, the contractor(s) would comply with the recommendations of the geotechnical report regarding selection of materials for engineered fill, compaction of fill and subgrades, and slope gradients. Compliance with the recommendations of the geotechnical report, as discussed in the mitigation measure below, and implementation of the erosion control measures contained in the proposed project SWPPP, as discussed above, would reduce direct and indirect impacts from onsite grading to a less-than-significant level.

# Mitigation Measures

Implementation of the following mitigation measure would reduce potentially significant geology and soils impacts to less-than-significant levels.

### Mitigation Measure GEO-1: Implement Geotechnical Report Recommendations Related to Grading

Imported fill used at and below subgrade elevations will be nonexpansive; be free of organic and inorganic debris, rubble, and any other deleterious material; and consist of relatively granular material having a Plasticity Index of less than 15. Additionally, material within 3 feet of the proposed pavement subgrade will have a minimum R-value of 15. Onsite soils may be used as engineered fill, provided they meet the above criteria.

Subgrade surfaces to receive fill, and general fill and backfilling after removing buried utilities and depressions caused by construction activities will be compacted to at least 90% relative compaction. Engineered fill for structural backfill of bridge abutments, footing subgrade, and for upper 6 inches of pavement subgrade and aggregate base of pavement sections will be compacted to 95% relative compaction.

For slope construction, the following maximum slope gradients will be applied: 2H:1V for permanent fill slopes; 1.5H:1V for the end slopes at the abutments; 1H:1V for temporary slopes under dry conditions; and 1.5H:1V for temporary slopes under submerged conditions.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **VII.** | **HAZARDS AND HAZARDOUS MATERIALS.** The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if it will: | | | | |
| 1. | Involve the routine transport, use, or disposal of hazardous materials in a manner that creates a significant public health hazard. | ❑ | ❑ | ❑ | ■ |
| 2. | Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. | ❑ | ❑ | ❑ | ■ |
| 3. | Be located on a site which contains hazardous materials and is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment. | ❑ | ■ | ❑ | ❑ |
| 4. | Known, or suspected to have, hazardous materials based on credible evidence or past land uses or operations. | ❑ | ■ | ❑ | ❑ |
| 5. | For a project located within an airport land use plan, or where such a plan has not been adopted, be within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area or encroach into FAR part 77 imaginary surfaces. | ❑ | ❑ | ❑ | ■ |
| 6. | For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area. | ❑ | ❑ | ❑ | ■ |
| 7. | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. | ❑ | ■ | ❑ | ❑ |
| 8. | Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. | ❑ | ❑ | ■ | ❑ |

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| 9. | Have levels of hazard wastes or materials which are in excess of federal or state standards as determined by a Phase I or Phase II Environmental Assessment. | ❑ | ■ | ❑ | ❑ |

# Setting

The EPA has determined the presence of one Environmental Indicator (EI) site in Reedley at the Safety Kleen Corporation's Reedley Recycling Center on South I Street (about 1.7 miles southeast of the project site). The EI report indicates known or suspected contamination of groundwater, surface soil, and subsurface soil at the Reedley Recycling Center above appropriately protective risk-based levels. The current status of the EI is undetermined, based on the need for more information. (U.S. Environmental Protection Agency 2005.)

While the Department of Toxic Substances Control EnviroStor database includes records of seven Leaking Underground Fuel Tank (LUFT) cleanup sites (gasoline leaks) and two records of Spills, Leaks, Investigation, and Cleanups (SLIC) between approximately 2,500 feet and 1 mile from the proposed project site, these LUFT and SLIC cases have been closed as the sites have been remediated (Department of Toxic Substances Control 2007). There are no records of known hazardous material sites within the proposed project area (Department of Toxic Substances Control 2007).

There are no schools within 0.25 miles of the project site. Schools within approximately 0.5 miles include Reedley College and Reedley High School to the east of the project site.

Manning Avenue, including the King's River Bridge (project site), is one of 10 Planned Evacuation Routes according to the General Plan Community Evacuation Route Plan (City of Reedley 1993a).

# Impact Evaluation

1. **No impact**. The project would not involve the routine transport, use, or storage of hazardous materials; emit hazardous emissions; or involve handling hazardous or acutely hazardous materials, substances, or waste. Temporary use of hazardous materials is discussed below.

2. **No impact**. There are no schools within 0.25 miles of the project site. There would be no impact.

3, 4, 9. **Less than significant with mitigation**. Although hazardous materials are not known to occur within the project area, the potential exposure of workers to hazardous wastes or material during construction could occur, and is considered potentially significant impact because of the possible threat to human health. Small quantities of commonly used materials such as fuels and oils would be temporarily used during construction to operate construction equipment. The storage or use of hazardous materials at or above regulatory threshold amounts is not proposed at the site. In the event that hazardous materials are discovered or released from construction equipment and materials during construction, Mitigation Measures HAZ-1 and HAZ-2 would be implemented to reduce impacts to less-than-significant levels.

5, 6. **No impact**. The project site is not located within two miles of a public or private airstrip. As such, the project would not conflict with an airport land use plan, operation of nearby airports, or pose a safety hazard to people living or working in the project area. There would be no impact.

7. **Less than significant impact with mitigation**. Evacuation route access on Manning Avenue could be temporarily affected by project construction; emergency access to the project site and to other areas that require access to the Kings River Bridge could be affected by the construction staging on the bridge during project construction. Specifically, temporary lane closures and construction-related traffic could delay or obstruct the movement of evacuation procedures and emergency vehicles. The proposed first stage of bridge construction would require the closure of one westbound traffic lane, resulting in a total of three traffic lanes (two eastbound and one westbound) with provisions for reversing traffic flow in the middle lane, if needed. During the proposed second stage, traffic would be realigned toward the north and would travel over the new bridge structure. During this stage, a total of four traffic lanes would be open (two eastbound and two westbound), resulting in no loss of traffic capacity over the current configuration. This impact is considered less than significant with implementation of Mitigation Measure HAZ-3, below.

8. **Less than significant**. Much of the construction activities for the proposed project would occur over the Kings River. However, grasses along the banks of the Kings River or undeveloped land adjacent to Manning Avenue could be ignited by hot construction equipment. A temporary access road would be constructed to allow equipment to access the bridge work area. This would clear grasses from areas where equipment would be located. Standard construction safety protocols and the use of equipment staging areas and access points that are free of fire hazards would reduce the potential of wildland fires to less-than-significant levels.

# Mitigation Measures

Implementation of the following mitigation measures would reduce potentially significant impacts related to hazards and hazardous materials to less-than-significant levels.

### Mitigation Measure HAZ-1: Prepare a Risk Assessment Plan

As part of construction specifications, a risk assessment plan will be prepared and procedures established before the commencement of construction activities to address the identification, excavation, handling, and disposal of hazardous materials. Procedures will include notifying the appropriate local environmental management agencies and local fire departments if contaminated soil or groundwater is encountered. The City will ensure that any identified environmental site conditions that may represent a risk to public health and safety will be remediated in accordance with federal, state, and local environmental laws and regulations. All recommendations in the risk assessment plan will be implemented by the City and all its representatives, including contractors and earthwork construction workers, such that people are not exposed to adverse conditions on the project site.

### Mitigation Measure HAZ-2: Control Contamination Resulting from Previously Unidentified Hazardous Waste Materials

In the event that previously unidentified waste or debris is discovered during construction/grading activities and the waste or debris is believed to include hazardous waste or materials, the contractor will immediately stop work in the vicinity of the suspected contaminant, remove workers and the public from the area, notify the resident inspector, secure the area as directed by the resident inspector, and notify the City of Reedley Building/Engineering/Public Works Department and the Reedley Fire Department.

### Mitigation Measure HAZ-3: Develop and Implement a Construction Management Plan

The City of Reedley will mitigate the proposed project's construction-related traffic impacts by requiring their contractors to develop and implement a Construction Management Plan (CMP) in accordance with City of Reedley policies and ordinances. The CMP will be implemented throughout project construction. Through requirements similar to the following, the CMP will:

- contain a plan for communicating with emergency service providers and residences, and anyone else who may be affected by project construction;
- contain an access and circulation plan for use by emergency vehicles when lane closures and detours are in effect;
- specify that, if lane closures occur, the contractor will provide advance notice to local fire and police departments to ensure that alternative evacuation and emergency routes are designed to maintain response times;
- require that access to driveways and private roads be maintained at all times;
- provide for adequate off-street parking for construction-related vehicles throughout the construction period;
- restrict delivery of construction materials to between the hours of 9:00 a.m. and 3:00 p.m. to avoid more congested morning and evening hours;
- require flagpersons wearing bright orange or red vests and using a "Stop/Slow" paddle to control oncoming traffic when one-lane closures occur;

- require construction warning signs be posted in accordance with local standards or those set forth in the Manual on Uniform Traffic Control Devices (MUTCD), in advance of the construction area and at any intersection that provides access to the construction area;
- require that written notification be provided to contractors regarding appropriate routes to and from the construction site and the weight and speed limits on local roads used to access construction sites; and
- specify that a sign be posted at all active construction areas giving the name and telephone number or e-mail address of the City of Reedley staff person and contractor personnel designated to receive complaints regarding construction traffic.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **VIII.** | **HYDROLOGY AND WATER QUALITY.** The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if it will: | | | | |
| 1. | Violate any water quality standards established pursuant to the Safe Drinking Water Act or the Porter-Cologne Water Quality Control Act, and any other related water regulations. | ❑ | ■ | ❑ | ❑ |
| 2. | Alter the existing drainage pattern of the site or area, in a manner that would result in substantial erosion or siltation on- or off-site or interfere substantially with groundwater recharge. | ❑ | ❑ | ■ | ❑ |
| 3. | Place people and structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, without adequate flood proofing as required by the Federal Emergency Management Agency. | ❑ | ❑ | ❑ | ■ |
| 4. | Not meet the following standards for minimum amounts of landscaped area which are considered necessary to reduce impacts of urban growth on the recharge potential of the groundwater basin and stormwater runoff: | ❑ | ❑ | ❑ | ■ |
| 5. | Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam. | ❑ | ❑ | ❑ | ■ |

Landscape Requirements

| **Land Use Category** | **Minimum Open Space Required** |
|---|---|
| Multiple Family Residential | 10 percent |
| Mobile Home Park | 5 percent |
| Detached Single Family Residential | 30 percent |
| Commercial | 5 percent |
| Industrial | 5 percent |

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| 6. | Violate or exceed a minimum standards established by the Regional Water Quality Control Board. | ❑ | ■ | ❑ | ❑ |

The following water quality setting discussion and impact evaluation is summarized from the Water Quality Study prepared for the proposed project (City of Reedley 2008e).

# Environmental Setting

## Hydrology

The North Fork Kings River and the Main Fork Kings River feed Pine Flat Reservoir. Downstream of Pine Flat Reservoir, the Kings River flows southwest, passing the City of Sanger before reaching the City of Reedley. The California Data Exchange Center (CDEC) contains flow data for Kings River below Pine Flat Reservoir. Monthly average flow data for the Kings River from 1954–2007 are presented in Table 3-12. The data indicate that the flow regime of the Kings River is highly seasonal. For example, the minimum January flow is 15 cubic feet per second (cfs), while the maximum flow in January is 759 cfs for the period of record.

**Table 3-12.** Monthly Average Flows on the Kings River below Pine Flat Reservoir

| | Minimum | Mean | Maximum |
|---|---|---|---|
| January | 15 | 115 | 759 |
| February | 13 | 121 | 533 |
| March | 26 | 174 | 512 |
| April | 98 | 297 | 729 |
| May | 115 | 609 | 1,539 |
| June | 66 | 544 | 1,595 |
| July | 21 | 245 | 964 |
| August | 6 | 77 | 383 |
| September | 9 | 39 | 255 |
| October | 9 | 29 | 174 |
| November | 11 | 43 | 195 |
| December | 11 | 77 | 548 |

Source: CDEC (Available: <http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=NKD>).
Data represent monthly averages from 1954 to 2007.
Units are shown in cubic feet per second (cfs).

## Water Quality

The proposed project is located on the Kings River between the Friant-Kern Canal and Peoples Weir. This reach of the river is not included in the current 303(d) impaired waterways list, however a downstream reach (Island Weir to Stinson and Empire Weirs), is 303(d) listed as impaired for EC, molybendum, and toxaphene, all of which result from agricultural sources, affecting an area of approximately 36 miles (State Water Resources Control Board 2006). Though this impaired reach is substantially downstream from the proposed project area (west of State Route 99), to meet the standards in the Water Quality Control Plan for the Tulare Lake Basin Plan (Central Valley Regional Water Quality Control Board 2004), unimpaired upstream waters may not contribute to downstream impairments. The Tulare Lake Basin Plan identifies beneficial uses and water quality objectives for inland surface waters. Contaminants from agricultural and urban land uses are part of surface water runoff that enters the river.

## Groundwater

The project area overlies the southern portion of the San Joaquin unit of the Central Valley groundwater aquifer (California Department of Water Resources 2006). In Fresno County, groundwater is present in valley deposits of alluvium that are several thousand feet thick, occurring in both confined and unconfined conditions (California Department of Water Resources 1974). The depth to groundwater varies significantly throughout the valley floor of the county, from less than 20 feet below ground surface in the northeast to more 200 feet below ground surface in the southeast (California Department of Water Resources 2006).

## Flooding

The Federal Emergency Management Agency (FEMA) issues Flood Insurance Rate Maps (FIRMs) that delineate flood zones. According to the FIRM map for the City of Reedley, the project area is located in Zone AE and Zone X (Federal Emergency Management Agency 2001). Zone AE is defined as an area within the 100-year floodplain where base flood elevations and flood hazards have been determined (Federal Emergency Management Agency 2001); Zone X is defined as an area within the 500-year floodplain or the 100-year floodplain with average depths of less than 1 foot.

# Regulatory Setting

## Federal

### Clean Water Act and Associated Environmental Compliance

There are several sections of the CWA that pertain to regulating impacts on waters of the United States. The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of the CWA and, specifically, under Section 404 (Discharges of Dredged or Fill Material) of the Act. Section 401 (Certification) specifies additional requirements for permit review, particularly at the state level.

#### Section 303

The State of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the Porter-Cologne Act . Section 303(d) of the CWA established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see discussion of state water quality standards below). To identify candidate water bodies for TMDL analysis, a list of water quality-limited streams was generated. These streams are impaired by the presence of pollutants, including sediment, and are more sensitive to disturbance. A Section 303(d) listing associated with a river segment downstream of the project area was described above in the Environmental Setting section.

#### Section 401

Section 401 of the CWA requires an applicant pursuing a federal permit to conduct an activity that may result in the discharge of a pollutant to obtain water quality certification (or a waiver). Water quality certification is issued by RWQCBs in California. Under the CWA, the state (through the RWQCB) must issue or waive Section 401 water quality certification for the project to be permitted under Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or placing fill material into waters of the United States and imposes project-specific conditions on development. A Section 401 waiver establishes standard conditions that apply to any project that qualifies for a waiver.

#### Section 402

The 1972 amendments to the federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section to the CWA devoted to stormwater permitting (Section 402[p]). The EPA has granted the State of California (the State Water Board and RWQCBs) primacy in administering and enforcing the provisions of CWA and NPDES. NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

The State Water Board issues both general and individual permits for discharges to surface waters, including both point-source and nonpoint-source discharges. In response to the 1987 amendments, EPA developed the Phase I NPDES Storm Water Program for cities with populations larger than 100,000 and Phase II for smaller cities. In California, the State Water Board has drafted the General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Small MS4 General Permit). The City has coverage under the Small MS4 General Permit, which is discussed in more detail below.

### Section 404

Dredging and placing fill material into the waters of the United States is regulated by Section 404 of CWA, which is administered by the USACE. Under the CWA, the state (i.e., the State Water Board) must issue or waive Section 401 water quality certification for the project to be permitted under Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or placing fill material into waters of the United States.

## Rivers and Harbors Act and Associated Environmental Compliance

The Rivers and Harbors Act regulates the placement of fill and structures in navigable waterways. The permit program, regulated under Section 10 of the Act, is administered by USACE. In practice, permitting is combined with CWA Section 404 permitting. A Section 404/10 permit would be required for construction of the proposed project.

## National Flood Insurance Program

Congress, alarmed by the increasing costs of disaster relief, passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts is to reduce the need for large publicly funded flood control structures and disaster relief by restricting development on floodplains.

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains. FEMA issues FIRMs for communities participating in the NFIP. These maps delineate flood hazard zones in the community.

## Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It requires federal agencies constructing, permitting, or funding projects within floodplains to do the following:

- avoid incompatible floodplain development,

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

## State

The Central Valley RWQCB is responsible for preparing a water quality control plan (basin plan) that identifies beneficial uses of the Kings River and its tributaries and water quality objectives for the protection of those beneficial uses. The Water Quality Control Plan for the Tulare Lake Basin Plan (Central Valley RWQCB 2004) contains numerical and narrative criteria for key water quality constituents, including dissolved oxygen (DO), water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents.

## Porter-Cologne Water Quality Control Act

### Overview

The Porter-Cologne Act, passed in 1969, complements the CWA (see Clean Water Act discussion above). It established the State Water Board and divided the state into nine regions, each overseen by an RWQCB. The State Water Board is the primary state agency responsible for protecting the quality of the state's surface water and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Sections 402, and 303(d). In general, the State Water Board manages both water rights and statewide regulation of water quality, while the RWQCBs focus exclusively on water quality in their regions. The Kings River basin is under the jurisdiction of the Central Valley RWQCB.

### Construction Activities

Construction activities are regulated under the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit), provided that the total amount of ground disturbance during construction exceeds 1 acre. The appropriate RWQCB enforces the General Construction Permit. Coverage under a General Construction Permit requires the preparation of a SWPPP and notice of intent (NOI). The SWPPP includes pollution prevention measures (erosion and sediment control measures, as well as measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a BMPs monitoring and maintenance schedule. The NOI includes site-specific information and certification of compliance with the terms of the General Construction Permit.

## Dewatering Activities

While small amounts of construction-related dewatering are covered under the General Construction Permit, the RWQCB has also adopted a General Dewatering Permit. This permit applies to various categories of dewatering activities and would likely apply to aspects of the proposed project if construction requires dewatering in greater quantities than those allowed by the General Construction Permit and discharges the effluent to surface waters. The General Dewatering Permit contains waste discharge limitations and prohibitions similar to those in the General Construction Permit. To obtain coverage, the applicant must submit an NOI and a pollution prevention and monitoring program (PPMP). The PPMP must include a description of the discharge location, discharge characteristics, primary pollutants, the receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. A representative sampling and analysis program must be prepared as part of the PPMP and implemented by the permittee, along with recordkeeping and quarterly reporting requirements during dewatering activities. For dewatering activities that are not covered by the General Dewatering Permit, an individual NPDES permit and waste discharge requirements (WDRs) must be obtained from the RWQCB. The General Dewatering Permit may be applicable to the City and its contractors where excavation activities may explore the water table.

## Stormwater Discharges

The CWA mandates permits for municipal stormwater discharges. The City has coverage under a Small MS4 General Permit. This permit requires that controls be implemented to reduce the discharge of pollutants in stormwater discharges to the maximum extent possible, including management practices, control techniques, system design and engineering methods, and other measures, as appropriate. As part of MS4 permit compliance, the City has prepared a Stormwater Management Plan, which outlines the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. These requirements include multiple measures to control pollutants in stormwater discharges. Construction and operation of the proposed project would be required to follow the guidance contained in the Stormwater Management Plan.

## California Fish and Game Code—Streambed Alteration Agreements

The CDFG is authorized under Sections 1600–1607 of the California Fish and Game Code to develop mitigation measures and enter into SAAs with applicants who propose projects that would obstruct the flow, or alter the bed or bank, of a channel of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams. California Fish and Game Code Sections 1600–1607 require the CDFG to be notified of any activity that could affect the

bank or bed of any stream that has value to fish and wildlife. After notification, the CDFG has the responsibility for preparation of a SAA, in consultation with the project proponent. The CDFG does not currently employ a formal definition of watercourses under its jurisdiction. The CDFG has jurisdiction over alterations to any channel with a definable bank and bed that is capable of accommodating water flow. Wetlands need not be present to establish CDFG jurisdiction. CDFG jurisdiction generally extends to work conducted within the 100-year floodplain.

# Local

## Fresno County General Plan

The following policies from the Health and Safety Element and Open Space Element of the Fresno County General Plan (County of Fresno 2000) apply to the Kings River and the proposed project:

- Policy HS-C.6 The County shall promote flood control measures that maintain natural conditions within the 100-year floodplain of rivers and streams and, to the extent possible, combine flood control, recreation, water quality, and open space functions. Existing irrigation canals shall be used to the extent possible to remove excess stormwater. Retention-recharge basins should be located to best utilize natural drainage patterns. Policy HS-C.9 The County shall prohibit the construction of essential facilities in the 100-year floodplain, unless it can be demonstrated that the facility can be safely operated and accessed during flood events.
- Policy HS-C.10 The County shall require that all placement of structures and/or floodproofing be done in a manner that will not cause floodwaters to be diverted onto adjacent property, increase flood hazards to other property, or otherwise adversely affect other property.
- Policy OS-A.25 The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

## City of Reedley General Plan

The General Plan Safety Element (City of Reedley 1993) includes policies similar to the County's to minimize the potential for damage caused by inundation in flood hazard areas. The following policies apply to the Kings River and are applicable to the proposed project:

- 603-03.1 Continue the floodplain management approach in flood hazard areas which are presently undeveloped, by regulation of land uses rather than concentrating on structural flood-control facilities–with their attendant high

costs and other disadvantages–as a method of reducing flood damage. Therefore, in flood hazard areas, encourage uses that are not subject to extensive flood damage.

- 603-03.2.1 Maintain designated Floodways as that portion of the 100-year flood hazard area to remain free of obstructions in order to reasonably provide for the passage of floodwaters of a given magnitude. The boundaries of the Designated Floodway shall be as established and administered by the State Reclamation Board.

# Impact Evaluation

1, 6. **Less than significant with mitigation**. Construction of the proposed project would be done on both flat and moderately steep terrain. The earthwork that would occur during the proposed project would result in soil disturbance that would temporarily increase localized erosion and sedimentation. Excessive sediment could cause increased turbidity and reduced light penetration in the Kings River, reducing prey capture for sight-feeding predators, reducing the light available for photosynthesis, clogging the gills and filter mechanisms of fish and aquatic invertebrates, reducing spawning and juvenile fish survival, smothering bottom-dwelling organisms, changing substrate composition, and reducing aesthetic values. Concentrations of nutrients and other pollutants (such as metals and certain pesticides) associated with sediment particles could also increase. Although these effects are usually short term and greatly diminish after revegetation of exposed areas, sediment and sediment-borne pollutants may be remobilized under suitable hydrologic and hydraulic conditions.

Construction of the meandering sidewalk and the bridge footings would disturb relatively small areas of soil. Construction activities in water channels, such as removing old bridge footings or building support footings for the new bridge, are more likely to affect erosion, sedimentation, and water quality, as described above. The project would likely require dewatering of some kind (including channel diversion) of the footprint of the bridge site to avoid sediment runoff into Kings River. It is anticipated that a stream diversion could be required for the proposed project. Fill and culverts or a cofferdam may be used to divert the stream around construction during removal of the existing foundations and installation of new foundations. For the fill and culverts option, the contractor may take advantage of the natural island in the middle of the river and simply widen the island to install the new foundations. Either option, fill and culverts or the cofferdam, could facilitate a direct path for sediment, oil and grease, and construction-related hazardous materials to the Kings River during construction through the discharge of construction-related dewatering effluent.

Without implementation of BMPs or mitigation measures, project activities could potentially cause an increase in ambient river turbidity of more than 20% above background turbidity (assumes the background turbidity is between 5 and 50 Nephelometric Turbidity Units [NTUs]). Construction activities would not impact beneficial uses of the river because turbidity would drop back to ambient conditions each day after in-water construction is complete.

Although sediment from erosion is the pollutant most frequently associated with construction activity, other pollutants of concern for the proposed project include toxic chemicals from heavy equipment or construction-related materials. A typical construction site uses many chemicals or compounds that would be hazardous to aquatic life if they were to enter a water body; these may include gasoline, oils, grease, solvents, lubricants, and other petroleum products. Many petroleum products contain a variety of toxic compounds and impurities and tend to form oily films on the water surface, altering oxygen diffusion rates. Concrete, soap, trash, and sanitary wastes are other common sources of potentially harmful materials on construction sites.

Construction activity in the Kings River is unavoidable. Flows in the river are seasonal and affected by dam releases for irrigation diversions. Construction in high flows would increase the chance of erosion, sedimentation, and effects on water quality.

The discharge of sediment or pollutants into surface waters during construction could result in violation of certain water quality standards set forth in the Water Quality Control Plan (Central Valley Regional Water Quality Control Board 1998). Without the implementation of BMPs or mitigation measures, project activities could cause an increase in ambient river turbidity of more than 20% above background turbidity (assumes the background turbidity in the Kings River is between 5 and 50 Nephelometric Turbidity Units [NTUs]). This would be considered a significant impact. Construction activities would not impact beneficial uses of the river because turbidity would drop back to ambient conditions each day after in-water construction is complete.

Because of its proximity to the Kings River, a SWPPP would be prepared for the project. Developed based on flow data below Pine Flat Reservoir, in the final construction plans, the City or its contractor would identify specifications and BMPs for erosion control to prevent water quality impacts. The standard erosion control measures would be implemented for all construction activities that expose soil.

Construction in periods of low river flows, when feasible, and implementation of the SWPPP, water quality control BMPs, soil erosion control BMPs, and hazardous material control BMPs as described in Mitigation Measures HYD-1, HYD-2, HYD-3, HYD-4, HYD-5, HYD-6, BIO-11, BIO-12, and HAZ-1, as well as USACE, Central Valley RWQCB, and CDFG permit conditions, would ensure that the proposed project does not violate any water quality standards or waste discharge requirements.

In addition, the proposed project would accumulate pollutants as a result of the existing traffic volumes on Manning Avenue. However, because of the nature of the project's drainage and its similarity to existing conditions, the accumulation of pollutants is considered a less-than-significant impact.

2. **Less than significant**. The proposed project would increase the amount of impervious surface by an incremental amount. This increase would generate only slightly more surface runoff during storms. Increases in total runoff volume

could accelerate soil erosion and stream channel scour, and increase the transport of pollutants to waterways. However, the proposed project is not expected to significantly alter existing drainage patterns. Runoff from Manning Avenue and, in particular, the bridge would be treated in a manner similar to the existing drainage pattern—that is, with stormwater draining through holes in the bridge deck, thus spilling directly into the river. Additional flow from the construction of a curb and sidewalk would also be directed to the same discharge point(s). This additional flow has the potential to transport traffic related contaminants directly to the Kings River. However, the portion of curb is considered to be small, and the total surface area that would be redirecting the flows and potentially transported additional contaminants is considered small and less than significant.

Drainage would be consistent with existing conditions. The implementation of the plan would not cause any appreciable change in the direction or routing of storm drainage. Because the increase in impervious surface is incremental and slight, the loss of groundwater recharge is considered very low, and groundwater levels are not expected to be affected by the proposed project.

3, 5. **Beneficial impact**. Placement of new bridge supports/piles within the channel of the Kings River would result in an incremental increase in water surface elevations upstream of the bridge. However, according to the Draft Hydraulics Report by Avila and Associates (Avila pers. comm.), the removal of the existing bridge footings, as part of this project, would result in a net decrease in surface water elevations when considered with the placement of new footings. This small positive impact on the floodplain would be considered beneficial and would require no mitigation.

4. **No impact**. The proposed project is not a development project and does not have a standard for a minimum amount of landscaped area. See the discussion under item 2 above, relating to groundwater recharge.

# Mitigation Measures

Implementation of the following mitigation measures would reduce potentially significant impacts to hydrology and water quality to less-than-significant levels.

### Mitigation Measure HYD-1: Low-Flow Season Construction

Since construction activity in a water body (the Kings River) is unavoidable, but flows in the water body are seasonal and affected by dam releases for irrigation diversions, construction will be conducted during the low water flow season as much as is feasible (see Table 3-12 for monthly average flows). Construction between the months of August to March will likely have less impact on the river because the flows are relatively lower, resulting in less disturbed sediment from construction. However, the timing and duration of construction may not be feasible for this to occur. Implementation of the BMPs required in other mitigation measures and in USACE, Central Valley RWQCB, and CDFG permit

conditions for the stream diversion, and installation of a sheet-pile cofferdam would allow for construction to occur during the months of high flow.

### Mitigation Measure HYD-2: Implement Requirements for a Stormwater Pollution Prevention Plan

A SWPPP includes pollution prevention measures (such as erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable RWQCB standards, local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a BMP monitoring and maintenance schedule. The City or its contractor is required to prepare a SWPPP before implementation of the proposed action, and doing so is a condition of the NPDES General Construction Permit.

The objectives of the SWPPP include identifying pollutant sources that could affect the quality of stormwater, implementing practices to reduce pollutants in stormwater runoff, and protecting the quality of receiving water. The SWPPP may include the following BMPs.

- Employ temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other groundcover) in disturbed areas.
- Use earth dikes, drainage swales, and ditches to control runoff, erosion, and pollutant loading. Specifically, use these measures to do the following:
  - convey surface runoff down sloping land;
  - intercept and divert runoff and avoid sheet flow over sloped surfaces;
  - direct runoff toward a stable watercourse, drainage pipe, or channel;
  - prevent runoff from accumulating at the base of a grade; and
  - avoid flood damage along roadways and around facility improvements.
- Identify on the construction drawings specific areas that may need the following measures.
  - As soon as possible, establish grass or other permanent vegetative cover in areas that have been disturbed by construction to reduce erosion by slowing runoff velocities, enhancing infiltration and transpiration, trapping sediment and other particulates, and protecting soil from raindrop impact.
  - Develop and implement a specific work schedule to coordinate the timing of land-disturbing activities with the installation of erosion and sedimentation control measures (such as limiting construction in active flow channels to the low-flow season). This measure will be used to reduce onsite erosion and offsite sedimentation.

While it is often infeasible to remove 100% of the contaminants, BMPs would be selected and designed to achieve maximum contaminant removal, using the best available technology (BAT) that is economically feasible to use and explicitly

identifying the expected level of BMP effectiveness regarding contaminant removal.

In addition to BMPs, the SWPPP would include a spill prevention and control plan to minimize the potential for, and effects of, spills of hazardous substances during construction. In the event of a spill, the contractor's superintendent would notify the applicable Fresno County emergency services office and the California Department of Toxic Substances Control. The spill response and cleanup protocols used by the office and department would be followed. A written description of the reportable releases that occurred would be submitted to the applicable RWQCB, including a description of the spill that indicates the type of material, an estimate of the amount spilled, the date of the spill, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future spills. Spills will be documented on a spill report form.

**Mitigation Measure HYD-3: Identify Additional Construction-Related Best Management Practices in the Construction Plans**

In the final construction plans, the City will identify specifications and BMPs for grading and erosion control that are necessary to prevent water quality impacts. The specifications will be included in construction contracts. Standard erosion control measures, such as management, structural, and vegetative controls, shall be implemented for all construction activities that expose soil. Erosion in disturbed areas shall be controlled by grading so that direct routes for conveying runoff to the Kings River are eliminated; constructing erosion control barriers, such as silt fences and mulching material; and reseeding disturbed areas with grass or other plants. These measures could include, but not be limited to, the following standard Caltrans BMPs (California Department of Transportation 2003) listed below, and described in Appendix D. The specific locations for each measure would be identified in the project drainage plan or SWPPP.

- Temporary sediment control
- Temporary soil stabilization
- Waste management
- Materials handling
- Vehicle and equipment operations to minimize release of contaminants
- Preservation of existing vegetation
- Water conservation practices
- Removal of sediment from dewatering effluent
- Scheduling
- Temporary concentrated flow conveyance controls

The general contractors and subcontractors conducting the work will construct or implement, regularly inspect, and maintain the BMPs identified in the construction plans. The construction contractors and subcontractors will also implement appropriate hazardous material management practices to reduce the

potential for chemical spills or releases of contaminants, including any non-stormwater discharge to drainage channels. Standard hazardous material management and spill control and response measures will be implemented to minimize the potential for surface and groundwater contamination. (See also Mitigation Measure HAZ-1: Prepare a Risk Assessment Plan.)

### Mitigation Measure HYD-4: Implement Provisions for Dewatering

Before discharging any dewatered effluent to surface water, the contractor will be required to obtain a NPDES permit and/or WDRs from the RWQCB. Depending on the volume and characteristics of the discharge, coverage under the RWQCB's General Construction Permit or General Dewatering Permit is permissible. As part of the permit, the permittee will design and implement measures, as necessary, so that the discharge limits identified in the relevant permit would be met. As a performance standard, these measures will be selected to control pollutant discharges using BAT and best conventional technology, and any more stringent controls necessary to meet water quality standards.

### Mitigation Measure HYD-5: Monitor Turbidity and Suspended Solids for Installation of Sheet-Pile Cofferdam and if needed, Stream Diversion

The City or its contractor would monitor turbidity and suspended solids during the installation of any cofferdams needed for the new bridge piles. Installation of cofferdams may also result in increased turbidity, and it the contractor may deems it would be beneficial to not use cofferdams for the removal of the old piles to protect the rivers beneficial uses. If the diversion alternative is used, these same measures would also apply during installation of culverts. Basin plan standards for turbidity are based on natural background turbidity. According to the standards, project activities shall not cause an increase in ambient river turbidity by more than 20% above background turbidity if the background turbidity is between 5 and 50 Nephelometric Turbidity Units (NTUs). This strict turbidity standard could possibly be exceeded during construction activities, however, turbidity will drop back to ambient conditions each day after in-water construction is complete. To prevent this, during the first week of construction, turbidity measurements would be taken in the river channel upstream of construction for baseline comparison conditions and at distances of 200 feet and 600 feet downstream of the project site for baseline water quality conditions. Measurements would then be taken two times a day during the construction period. Measurements should be taken where the flow regime is applicable to the relative flow regime around the construction zone so that the sample is representative of the water quality affected by construction. The timing of the measurements should coincide with installation and removal of sheet piles and during any other in-water construction activities. If turbidity limits were to exceed 20% of normal turbidity, the RWQCB would be notified, and an explanation for the increased turbidity from construction would be included in a water quality memorandum along with the data collected. The applicant or their contractor can perform the turbidity measurements using a standard turbidity probe. (YSI Inc. is a leader in providing standard turbidity probes.) Measurements should be recorded and documented by the applicant and contractor. If the applicant or contractor prefers, a construction worker can be

trained to record turbidity measurements. An investigation to determine the cause of the increased turbidity would be conducted and construction operations would be corrected where applicable. If necessary, the frequency and duration of monitoring could be revised, in consultation with the Central Valley RWQCB, as part of the NPDES permit process. In determining compliance with the above limits, the Central Valley RWQCB may prescribe approximate averaging periods provided that beneficial uses will be fully protected. This proposed monitoring is subject to additional conditions resulting from negotiations for the required permits with USACE, CDFG, and the Central Valley RWQCB.

### Mitigation Measure HYD-6: Implement Other Provisions for Work in Surface Waters

Since year-round flows are present in the Kings River, the contractor will implement measures to protect surface water quality, in addition to the channel diversion or cofferdam, where applicable. The use of water quality measures would avoid direct exposure of surface water to sediment created as part of construction activity. As a performance standard, the measures would maintain the Central Valley RWQCB basin plan standards for turbidity, listed below.

- Where natural turbidity is between 0 and 5 NTUs, increases would not exceed 1 NTU.
- Where natural turbidity is between 5 and 50 NTUs, increases would not exceed 20%.
- Where natural turbidity is between 50 and 100 NTUs, increases would not exceed 10 NTUs.
- Where natural turbidity is greater than 100 NTUs, increases would not exceed 1%.

In determining compliance with the above limits, the Central Valley RWQCB may prescribe, as part of their permit conditions, approximate averaging periods provided that beneficial uses will be fully protected. In areas where the proposed project has the potential to result in elevated turbidity, monitoring would be performed at least twice daily at upstream and downstream locations to determine whether the standards outlined above have been met. In the event that they are not being met, turbidity-generating activities would cease until turbidity is within the identified limits, and construction methods or turbidity control measures would be modified to ensure that turbidity limits continue to be met.

### Mitigation Measure BIO-11: Protect Water Quality and Prevent Erosion in the Kings River

The full text of this measure is provided above.

### Mitigation Measure BIO-12: Obtain Required Permits, Authorizations, Certifications, and Agreements

The full text of this measure is provided above.

### Mitigation Measure HAZ-1: Prepare a Risk Assessment Plan

The full text of this measure is provided above.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **IX.** | **LAND USE AND PLANNING.** The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if it will: | | | | |
| 1. | Conflict with the applicable land use plan, policy, or regulation of the City of Reedley, including, but not limited to the General Plan, Landscape of Choice document, Ahwahnee Principles, applicable specific plans, or zoning ordinance adopted for the purpose of avoiding or mitigating an environmental effect. | ❑ | ❑ | ❑ | ■ |
| 2. | Cause or contribute to the physical degradation of a business or industrial district. | ❑ | ❑ | ❑ | ■ |
| 3. | Disrupt or divide the physical arrangement of an established area. | ❑ | ❑ | ❑ | ■ |
| 4. | Cause a likely decrease in the value of adjacent properties as determined by an appraisal. | ❑ | ❑ | ❑ | ■ |

# Setting

The primary land uses in the project area are recreation and open space on the Kings River. Other nearby land uses include hotel, residential, commercial, and agriculture.

The project site is within the City of Reedley Sphere of Influence. The proposed project is within the city limits, with the exception of the proposed construction staging areas, which are in unincorporated Fresno County. Parcels immediately surrounding the bridge are designated in the General Plan as Open Space. Other parcels near the project site are designated as Recreation, Limited Industrial, and Central Commercial (City of Reedley 1993). The Kings River and the existing Manning Avenue Bridge are not zoned on the City's zoning map. Adjacent parcels are zoned as Resource, Conservation and Open Space (RCO), Central and Community Commercial (Office and Retail Zone [CC]), and Light Industrial (Limited Industrial Uses) combined with PUD (Planned Unit Development Combining District) (ML-P) (City of Reedley 2002).

The Reedley Redevelopment Plan was adopted by the City and the Reedley Redevelopment Agency in 1991 to establish general standards and controls for construction and development activities. According to the Reedley Redevelopment Agency Project Area map, the riverside area to the west of the

Manning Avenue Bridge, within the city limits, are within the City's Redevelopment Area (City of Reedley 2000b).

Adopted in 1991, the Kings River Corridor Specific Plan addresses important land use issues along the Kings River. The project site is within the Kings River Corridor Specific Plan area, as designated in the General Plan. The following goals of the Kings River Corridor Specific Plan are relevant to the proposed project:

> **2.3 Circulation**
> **Goal 1**: Develop a circulation system for the Planning Area which is safe, convenient, and aesthetic; protects neighborhoods; effectively provides extension of and connections to existing street and road systems; and relieves traffic congestion on streets adjacent to the Planning Area.
>
> **2.4 Recreation, Open Space, and Access**
> **Goal 1**: Protect and enhance existing native habitat, wildlife resources, and other aspects of the Kings River environment.
>
> **2.5 Public Infrastructure, Facilities, and Services**
> **Goal 1:** Provide for a safe and properly functioning planning area.
>
> **2.7 Safety and Management**
> **Goal 2**: Increase recreational safety on the Kings River.

Adopted in 2002, the Rail Corridor Master Plan planning area terminates at Manning Avenue and the east side of the Kings River (Collins & Schoettler Planning Consultants 2002).

Neither a habitat conservation plan nor a natural community conservation plan has been prepared for the proposed project area.

The applicable Ahwahnee Community Principle for the proposed project is Community Principle 11:

> Streets, pedestrian paths and bike paths should contribute to a system of fully-connected and interesting routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting; and by discouraging high speed traffic. (Local Government Commission 1991.)

# Impact Evaluation

1. **No impact**. Replacing the existing bridge on Manning Avenue would not interfere with or otherwise affect the land use and zoning designations of parcels adjacent to the project.

   The project would comply with all policies of the Kings River Corridor Specific Plan to manage and protect the river environment during construction activities and operations. By replacing a currently unsafe, seismically inadequate bridge,

reducing the number of bridge support piers within the river channel, and improving pedestrian safety on the bridge, the project is consistent with and would further the safety-related goals of the Kings River Corridor Specific Plan and the applicable Ahwahnee Principle.

2. **No impact**. The proposed project would not affect a business or industrial district.

3. **No impact**. The proposed project involves the replacement of the existing bridge over the Kings River and construction of new and replacement sidewalk, and would not involve any elements, such as new streets, that could physically divide an established community.

4. **No impact**. The proposed project would not affect the value of adjacent properties.

## Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in significant impacts on land use or planning-related issues.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **X.** | **MINERAL RESOURCES.** | | | | |
| | The Thresholds of Significance adopted by the City state that a project would normally have a potentially significant impact if it would result in the loss of availability of a locally-important mineral resource recovery site delineated on the General Plan, an adopted specific plan or other land use plan. | ❑ | ❑ | ❑ | ■ |

# Setting

The General Plan does not identify the project area as having mineral resources (City of Reedley 1993).

# Impact Evaluation

**No impact**. The proposed project would not affect locally important mineral resources because none are present in the project vicinity.

# Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in significant impacts on mineral resources.

## XI. NOISE.

The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if it will be inconsistent with the policies and standards adopted in the General Plan Noise Element. Standards currently exist for rural residential, urban residential, urban commercial and urban industrial land uses. Additional land use categories have been added based on community input, standards by Fresno County, and standards utilized by other agencies for rural open space and wilderness areas.

Table XI-1. General Plan Noise Standards (A-Weighted Decibels (dB(A))

| Land Use | Daytime Average ($L_{50}$) | Nighttime Average ($L_{50}$) | Exterior Daily Average ($L_{dn}$) | Interior Daily Average ($L_{dn}$) |
|---|---|---|---|---|
| Rural Residential | 50 | 45 | 55 | 45 |
| Urban Residential | 55 | 50 | 60 | 45 |
| Urban Commercial | 65 | 60 | | |
| Rural Recreation/Open Space | 50 | 50 | 50 | 50 |
| Wilderness Areas | 25 | 25 | 25 | 25 |

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| | In addition to the maximum levels listed in Table XI-1, above, any additional noise that exceeds the following threshold shall be considered to be significant: | | | | |
| 1. | An increase in the noise environment of 5 dB (A) or greater shall be considered to be a significant noise impact on human receptors | ❑ | ■ | ❑ | ❑ |
| 2. | In areas already exceeding the standards contained herein, an increase of three decibels or more shall be considered to be significant. | ❑ | ■ | ❑ | ❑ |
| 3. | In areas exceeding the maximum for any land use contained herein (65 dB([A]), a 1.5 decibel increase. | ❑ | ❑ | ■ | ❑ |
| 4. | For Wilderness and Rural Recreation areas, an increase of 1.6 decibels shall be considered to be significant. | ❑ | ■ | ❑ | ❑ |

The following noise setting discussion and impact evaluation is summarized from the Noise Study Technical Report prepared for the proposed project (City of Reedley 2008f).

# Setting

## Noise Terminology

The following are brief definitions of noise terminology used in this evaluation:

- **Sound.** A vibratory disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels, which approximates the frequency response of the human ear.
- **Equivalent Sound Level ($L_{eq}$).** The average of sound energy occurring over a specified period. In effect, Leq is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
- **Exceedance Sound Level ($L_{xx}$).** The sound level exceeded XX percent of the time during a sound level measurement period. For example $L_{90}$ is the sound level exceed 90 percent of the time and $L_{10}$ is the sound level exceeded 10 percent of the time.
- **Maximum and Minimum Sound Levels ($L_{max}$ and $L_{min}$).** The maximum or minimum sound level measured during a measurement period.
- **Day-Night Level ($L_{dn}$).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Peak Particle Velocity (PPV).** The maximum instantaneous positive or negative peak of a vibration wave.

$L_{dn}$ and CNEL values rarely differ by more than 1 dB. As a matter of practice, $L_{dn}$ and CNEL values are considered to be equivalent and are treated as such in this assessment. In general, human sound perception is such that a change in

sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving sound level.

# State Regulations

## Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Barrier Projects

Caltrans protocol (California Department of Transportation 2006) specifies the policies, procedures, and practices to be used by agencies that sponsor new construction or reconstruction projects. The noise abatement criteria (NAC) specified in the protocol are the same as those specified in 23 CFR 772 (Federal Highway Administration Regulations). The protocol defines a noise increase as substantial when the predicted noise levels with project implementation exceed existing noise levels by 12 dBA $L_{eq(h)}$. The protocol also states that a sound level is considered to approach the NAC when the sound level is within 1 dB of the NAC identified in 23 CFR 772 (e.g., 66 dBA is considered to approach the NAC of 67 dBA but 65 dBA is not).

## Standard Specifications for Construction of Local Streets and Roads

Noise from construction activities is addressed in Caltrans' Standard Specifications for Construction of Local Streets and Roads, Section 7-1.01I, Sound Control Requirements (California Department of Transportation 2002), which states that noise levels generated during construction shall comply with applicable local, state, and federal regulations and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

# Local Regulations

## Fresno County Noise Ordinance

With respect to exterior noise standards, the Fresno County Noise Ordinance (section 8.40.040) (County of Fresno 2000) includes the following relevant standards:

A. It is unlawful for any person, at any location within the unincorporated area of the county, to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, hospital, church or public library situation in either the incorporated or unincorporated area to exceed the noise level standards as set forth in the following table [Table 3-13, below].

**Table 3-13.** Fresno County Noise Level Standards

| | | Noise Level Standards, dBA | |
|---|---|---|---|
| Category | Cumulative Number of Minutes in Any 1-hour Period | Daytime 7 a.m. to 10 p.m. | Nighttime 10 p.m. to 7 a.m. |
| 1 | 30 | 50 | 45 |
| 2 | 15 | 55 | 50 |
| 3 | 5 | 60 | 55 |
| 4 | 1 | 65 | 60 |
| 5 | 0 | 70 | 65 |

Source: Fresno County 2000.

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

Ordinance section 8.40.060, Noise Source Exemptions, includes the following relevant exemption:

C. Noise sources associated with construction—provided such activities do not take place before six a.m. or after nine p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.

## City of Reedley General Plan

The General Plan Noise Element (City of Reedley 1993) is based on the Fresno County General Plan and includes maximum acceptable noise levels that equal the County standards. The noise element does not specifically address thresholds for construction noise.

## City of Reedley Municipal Code

The City of Reedley's Municipal Code (City of Reedley 2006) makes it "unlawful for any person to make, continue, allow or cause to be made or emanate any excessively, unnecessarily, unnaturally or unusually loud noise or sound from any radio, phonograph, disc player, tape deck, stereo, television or other mechanical, electrical or electronic sound amplification device or instrument which annoys, disturbs, injures or endangers the comfort, repose, quiet, health, peace or safety of other persons within the city; such act or acts hereby being declared a public nuisance." The following two items within the code are also relevant:

A. Emanating noise or sound shall be defined for these purposes as "excessively", "unnecessarily", "unnaturally" or "unusually loud" when it is plainly audible to a person of normal hearing sensitivity at a distance of twenty five feet (25') from the source of such noise or sound. Proof of same shall be prima facie evidence of a violation of this section.

E. Alternative prima facie evidence that such noise or sound is excessively, unnecessarily, unnaturally or unusually loud is shown by a sound level exceeding the ambient sound level by more than five (5) decibels measured at the property line or, in the case of common wall construction of condominiums, apartments or business facilities, measured within the adjoining occupied unit.

## Existing Conditions

Traffic on Manning Avenue is the primary source of existing noise in the project area. Traffic data posted on the City of Reedley web site (City of Reedley 2004) indicate that the 2004 average daily traffic volume on Manning Avenue was about 21,000 vehicles. The traffic noise level associated with that volume of traffic was calculated using the FHWA Traffic Noise Model (TNM), version 2.5. With a posted speed limit of 55 mph, that volume of traffic corresponds to a worst-hour traffic noise level of about 67 dBA $L_{eq}$ and a daily traffic noise level of 65 Ldn at 100 feet from the roadway centerline.

While railroad tracks are located near the project site, a reduction in rail activity has resulted in minimal noise from the railroad. Additionally, this condition is expected to continue due to limited rail operations in the future.

## Sensitive Land Uses

The existing area around the project site is generally rural agricultural land and open space. Noise sensitive adjacent land uses include a residence, a restaurant, a campground, and a motel. Nearby noise sensitive land uses include a college, a commercial area, and residences. Table 3-14, below, summarizes developed land uses in the project area. Figure 3-3 shows the location of these uses relative to the project site (the numbers on the figure correspond to Table 3-14).

**Table 3-14.** Developed Land Uses in the Project Area

| | Land Use | Type of Use | Location | Distance to Bridge |
|---|---|---|---|---|
| 1 | Kelly's Beach at the Kings River Resort | Restaurant and Campground | Southwest of bridge | Restaurant, approximately 240 feet; campground, adjacent |
| 2 | The Edgewater Inn | Motel | Southwest of bridge | 600 feet |
| 3 | Single-family residence | Residence | Southwest of bridge | 470 feet |
| 4 | Reedley College | School | Northeast of bridge | 350 feet |
| 5 | Small subdivision | Residences | Northwest of bridge | 530 feet |
| 6 | Reedley Cold Storage, Pacific Trellis | Commercial | Northeast of bridge | 350 feet |


N

0 500

feet

Note: Numbers correspond to Table 3-14.
Developed Land Uses in the Project Area

Source: Google Earth, 2007.

06540.06 Noise (7-07)

**Figure 3-3**
**Land Uses in the Project Area**

# Discussion of Impacts

1. **Less than significant with mitigation**. The nearest existing residence is located about 350 feet from the bridge and existing use areas in the nearby camping resort are about 250 feet from the bridge. Exterior traffic noise levels are calculated to be about 59 $L_{dn}$ at 250 feet and about 57 $L_{dn}$ at a distance of 350 feet from the roadway centerline. Existing exterior noise levels at the nearest noise sensitive use areas are in compliance with the City of Reedley's noise and land use compatibility standards but are not compliant with the Thresholds standard for Rural Recreation/Open Space areas. Noise levels are a result of traffic along Manning Avenue (an existing noise source) and not of the project itself, which would not increase capacity or substantially change the roadway alignment. Accordingly, the proposed project would not result in any measurable change in the traffic noise level in the project area.

   During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Implementation of the proposed project would involve demolition activities, pile driving, and other noise-generating construction activities. Table 3-15 summarizes noise levels typically produced by the noise-generating equipment anticipated to be used on this project. Maximum noise levels from non-impact equipment is in the range of 80 to 90 dBA, and $L_{eq}$ value are in the range of 75 to 81 dBA at 50 feet. The maximum noise level from impact equipment is in the range of 85 to 95 dBA, and $L_{eq}$ values are in the range of 78 to 88 dBA at 50 feet. The nearest residence is located about 350 feet from the bridge. Use areas in the nearby camping resort are about 250 feet from the bridge. Construction noise attenuates at a rate of about 6 dB per doubling of distance. Table 3-15 also shows the calculated noise levels.

**Table 3-15.** Typical Construction Noise Levels

| Equipment Description | Impact Device | $L_{max}$ at 50 feet (dBA) | Usage Factor | $L_{eq}$ at 50 feet (dBA) | $L_{eq}$ at 250 feet | $L_{eq}$ at 350 feet |
|---|---|---|---|---|---|---|
| Backhoe | No | 80 | 40% | 76 | 62 | 59 |
| Compressor | No | 80 | 40% | 76 | 62 | 59 |
| Concrete Mixer Truck | No | 85 | 40% | 81 | 67 | 64 |
| Concrete Pump Truck | No | 82 | 20% | 75 | 61 | 58 |
| Concrete Saw | No | 90 | 20% | 83 | 69 | 66 |
| Crane | No | 85 | 16% | 77 | 63 | 60 |
| Doze | No | 85 | 40% | 81 | 67 | 64 |
| Dump Truck | No | 84 | 40% | 80 | 66 | 63 |
| Excavator | No | 85 | 40% | 81 | 67 | 64 |
| Front-End Loader | No | 80 | 40% | 76 | 62 | 59 |
| Grader | No | 85 | 40% | 81 | 67 | 64 |
| Hydra-Ram | Yes | 90 | 10% | 80 | 66 | 63 |
| Impact Pile Driver | Yes | 95 | 20% | 88 | 74 | 71 |
| Jackhammer | Yes | 85 | 20% | 78 | 64 | 61 |
| Pneumatic Tools | No | 85 | 50% | 78 | 64 | 61 |

The maximum acceptable noise levels shown in Table XI-1, above, were used as a threshold for assessing the severity of impacts of the construction noise levels in Table 3-15. Construction activity that occurs outside the exempt hours of the day (6:00 a.m. to 9:00 p.m. on any day except Saturday or Sunday or 7:00 a.m. to 5:00 p.m. on Saturday or Sunday) could result in noise that exceeds the 50 dBA daytime or the 45 dBA nighttime standards. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.

2. **Less than significant with mitigation**. Existing exterior noise levels at the nearest noise sensitive use areas are in compliance with the City's noise and land use compatibility standards but are not compliant with the Thresholds standard for Rural Recreation/Open Space areas. As shown in Table 3-15, above, construction activities would cause an increase in noise levels greater than the 3-decibel threshold for areas already exceeding the noise standards. Noise sources associated with construction are exempt from the noise ordinance provisions provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday. Construction activity that occurs outside the exempt hours of the day could result in noise that exceeds the noise standards. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.

3. **Less than significant**. Temporary construction-related noise would cause an increase in noise levels that is greater than 1.5 decibels, as discussed under item 1, above. However, the existing noise levels in the project area do not exceed the maximum for any land use (65 dBA).

4. **Less than significant with mitigation**. The proposed project is adjacent to the Kelly's Beach at the Kings River Resort, an area zoned as Recreation. As discussed under item 1, above, temporary increases in noise caused by construction-related activities could be as great as a 15 dBA increase (pile driving) at 250 feet from the project site. This exceeds the threshold increase of 1.6 decibels. However, noise sources associated with construction are exempt from the noise ordinance provisions provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday. Construction activity that occurs outside the exempt hours of the day could result in noise that exceeds the noise standards. Implementation of Mitigation Measure NOI-1 would reduce this impact to a less-than-significant level.

# Mitigation Measures

Implementation of the following mitigation measures would reduce potentially significant noise impacts to less-than-significant levels.

### Mitigation Measure NOI-1: Employ Noise-Reducing Construction Practices

The City will employ noise-reducing construction practices so that noise from construction activities does not exceed County noise standards. Measures that can be employed include, but are not limited to, those listed below.

- Prohibit noise-generating construction operations between the hours of 9:00 p.m. and 6:00 a.m. Monday through Friday and 5:00 p.m. and 7:00 a.m. on Saturday and Sunday.
- Locate equipment as far a practical from noise-sensitive land uses.
- Use sound control devices that are no less effective than the devices provided on the original equipment.
- Use noise-reducing enclosures around noise-generating equipment.
- Construct barriers between noise sources and noise-sensitive land uses or take advantage of existing barrier features (terrain, structures) to block sound transmission.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XII.** | **POPULATION AND HOUSING.** The Thresholds of Significance adopted by the City state that a project's effect will normally be considered a potentially significant impact if it will: | | | | |
| 1. | Induce population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); and which would require the extension of new services and conversion of undeveloped land. | ❑ | ❑ | ❑ | ■ |
| 2. | Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere. | ❑ | ❑ | ❑ | ■ |
| 3. | Result in a jobs to housing unit ratio (also known as a "job/housing balance") which is inconsistent with the General Plan. | ❑ | ❑ | ❑ | ■ |

# Setting

According to the General Plan, the City can anticipate a 68% to 86% increase in population between 1991 and 2012. The population of the City increased from 9,100 in 1975 to 13,431 in 1985 - an increase of 47% in ten years (City of Reedley 1993). The total population was 22,895 at the 2000 census. The California Department of Finance estimates that in 2006 to 2007, the City will experience a 6.7% increase in population, from 23,348 in 2006 to an estimated 24,909 in 2007 (California Department of Finance 2007).

# Impact Evaluation

1. **No impact**. Replacement of the existing Manning Avenue Bridge is proposed for safety reasons (refer to the Project Description). The project would not increase the capacity of the bridge or of Manning Avenue. Construction of sidewalk is for safety and aesthetic reasons. Therefore, the proposed project would not induce population growth in the city.

2. **No impact**. No removal of any habitable structures or residences would be necessary to complete the proposed project.

3. **No impact**. The proposed project would not affect the job/housing ratio in the city or elsewhere.

# Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in any significant impacts on population and housing.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XIII.** | **PUBLIC SERVICES.** | | | | |
| | The Thresholds of Significance adopted by the City state that a project's effect will normally be considered a significant impact if it will cause an increase in city population that exceeds the ability of the City to maintain staffing ratios specified in the General Plan. | ❑ | ❑ | ❑ | ■ |

# Setting

Fire protection in the city is provided by the Reedley Fire Department, which is a volunteer fire department with one station at 1060 D Street in Reedley. The Fresno County Fire Protection District (formerly the Mid-Valley Fire Protection District) serves the unincorporated areas near Reedley, through a mutual aid agreement with the Reedley Fire Department (City of Reedley 1993). Police protection in the City of Reedley is provided by the Reedley Police Department.

# Impact Evaluation

**No impact**. As discussed above in Section XII, Population and Housing, the proposed project would not induce population growth that could result in the need for new or altered police, fire, school, or park facilities and does not directly affect facilities for these services.

# Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in any significant impacts on public services.

| | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|
| **XIV. RECREATION and OPEN SPACES.** | | | | |
| A project's effect will normally be considered potentially significant if it will remove public or private open space, or conflict with open space and recreation master plans. | ❑ | ❑ | ■ | ❑ |

# Setting

The City owns 29.27 acres of public open space and 201.71 acres of public parks and recreation facilities. The Kings River is an important recreational resource in the City, providing public fishing, swimming, and boating opportunities to the community and visitors (City of Reedley 1993).

The Kings River Corridor Specific Plan action plan includes:

> **3.3 Recreation, Open Space and Public Access Action Plan**
>
> The plan recommends the following:
>
> 1.0 Construct a nature trail along the east side of the Kings River in Subarea 2. A primary trail, to be constructed of decomposed granite, will extend from Smith Ferry Park to the Manning Avenue bridge and then connect with the proposed Subarea 1 trail system. This trail will provide the public access to the river that will be required by State law when the privately owned lands along the river are subdivided.
>
> The primary trail will generally be located on the existing dirt road that is established along the edge of the riparian area. Existing dirt trails that meander through the riparian area will be accessible from the primary trail (Knopf Engineering 1991).

In the proposed project area, the nature trail has not yet been constructed south of Reedley College. When constructed, the trail would pass under Manning Avenue and the new bridge structure, on the east side of the Kings River, as mentioned in the Kings River Corridor Specific Plan.

# Impact Evaluation

**Less than significant**. Recreational access to parts of the Kings River near the project site could be temporarily restricted during construction activities. This

would be short-term and is therefore considered less than significant. Once completed, the proposed project would improve water recreation by increasing the spans between bridge piers.

To meet current design standards, the replacement bridge structure would be wider than the existing structure and would thereby remove a small amount of open space upland of the Kings River up- and downstream from the bridge. The discussion of effects on riparian vegetation are included in Section IV, Biological Resources, above. The upland area needed to accommodate the new structure is not directly used as a recreation resource.

The proposed project would be designed to accommodate the future construction and continuation of the nature trail along the east side of the Kings River, consistent with the Kings River Corridor Specific Plan and the General Plan.

## Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in any significant impacts on recreation resources.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XV.** | **TRANSPORTATION/TRAFFIC.** The Thresholds of Significance adopted by the City state that a project's effect would normally be considered a potentially significant impact if it will: | | | | |
| 1. | Result in a Level of Service below LOS C for any street segment or intersection in the City or its Sphere of Influence, for any one-hour period. | ❑ | ■ | ❑ | ❑ |
| 2. | Result in traffic increases by 500 vehicles per day, 100 trips during morning or evening peak traffic times, or by 25 percent of existing traffic on any given segment. | ❑ | ❑ | ❑ | ■ |
| 3. | Require access to a major road or arterial road from a driveway that would create an unsafe situation, or require a new traffic signal or major revision to an existing traffic signal. | ❑ | ■ | ❑ | ❑ |
| 4. | Create a hazard for pedestrians or other non-motorized transportation modes. | ❑ | ■ | ❑ | ❑ |
| 5. | Require driveway access to major activity center closer than 300 feet to the adjacent intersection of a collector or arterial street, measured from the curb return to the nearest edge of the driveway. | ❑ | ■ | ❑ | ❑ |

# Setting

Manning Avenue is a major arterial with an average operating speed of 55 mph west of the project and an arterial with an operating speed of 45 mph east of the project. The roadway and bridge have two traffic lanes in each direction (Quincy Engineering 2007) and a raised median.

The General Plan Circulation section contains the following relevant objectives and policies for the street and highway circulation system:

> **Objective 302-02.1.** Plan and provide a street and highway system to move people and goods in an orderly, safe, and efficient manner. Not to exceed Level of Service "C".
>
> **Policy 302-03.9.** The City should insure that planned streets and highways operate to their maximum efficiency by coordinating their multi-modal use as follows:

302-03.9.4. Provide areas for pedestrian travel which enhance the safety and efficiency of the street system.

# Impact Evaluation

1. **Less than significant with mitigation**. Temporary lane closures and construction-related traffic could delay or obstruct the movement of vehicles on Manning Avenue and cause temporary changes in level of service below the threshold of "C," potentially causing a significant impact. After construction, the proposed project would not have an effect on level of service. Implementation of Mitigation Measure HAZ-3 would reduce the effects of the temporary delays in traffic during construction to less-than-significant levels.

2. **No impact**. The proposed project would not increase the capacity of Manning Avenue and would not increase the number of vehicle trips per day on the roadway.

3, 5. **Less than significant with mitigation**. During construction, vehicles would be entering and leaving Manning Avenue from existing driveways to access staging and construction areas immediately adjacent to the bridge. Equipment staging would likely occur in the northwest quadrant of the project area with access at Kings River Road. The staging location may have to shift during the second stage of bridge construction, however. Ideally, staging areas would allow the contractor to access the project site without having to cross lanes of traffic. Should the contractor wish to store equipment to the south of the bridge during the second stage of construction, the contractor may negotiate with the property owner in the southeast quadrant of the project area. Access to this southeast location is via an existing driveway which is greater than 300 feet west of the intersection of Manning Avenue and I Street. As mentioned above, temporary lane closures would be used during construction. Construction-related vehicles accessing Manning Avenue could potentially create an unsafe situation to traffic on Manning Avenue. Implementation of Mitigation Measure HAZ-3 would reduce the impacts of construction-related traffic accessing Manning Avenue via staging area driveways to less-than-significant levels.

4. **Less than significant with mitigation**. The proposed project would improve safety for pedestrians by adding sidewalks as part of the new bridge structure and east of the bridge. However, during construction the temporary lane closures and construction-related traffic could create additional hazards for pedestrians and other non-motorized transportation modes. These impacts would be reduced to less-than-significant levels with implementation of Mitigation Measure HAZ-3.

# Mitigation Measures

Implementation of the following mitigation measure would reduce potentially significant traffic impacts to less-than-significant levels.

**Mitigation Measure HAZ-3: Develop and Implement a Construction Management Plan**

The full text of this measure is provided above.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XVI.** | **UTILITIES AND SERVICE SYSTEMS.** | | | | |
| | The Thresholds of Significance adopted by the City state that a project's effect will normally be considered potentially significant if it will result in additional demand on sanitary sewer collection and/or treatment facilities, storm water drainage facilities or expansion of existing facilities, or domestic water facilities that cannot be handled by existing system capacity or capacity in the adopted City Master Plan. | ❑ | ❑ | ❑ | ■ |

# Setting

The City provides drinking water, sewage, and storm drainage service in Reedley. The City collects and transports sewage to a wastewater treatment plant on the west side of the Kings River near Olsen Avenue. Existing storm drain basins are expected to accommodate capacity at least until 2012 (City of Reedley 1993).

The Kings River Water Association (KRWA) manages the water entitlement schedule, delivery, and water quality of the Kings River, which provides water to over one million acres of farmland and beneficial irrigation use on nearly 20,000 San Joaquin Valley farms in portions of Fresno, Kings, and Tulare Counties. Kings River Conservation District (KRCD) is a public agency that deals with flood control, power, on-farm water management, and groundwater development. KRCD has no water entitlement or supply. KRWA and other agencies constantly monitor and report on river flows and Pine Flat Reservoir storage, which fluctuate from year to year based on rainfall and snow melt levels (Kings River Water Association 2006).

# Impact Evaluation

**No impact**. The project would not produce wastewater and therefore would not exceed wastewater treatment requirements or exceed a wastewater treatment provider's capacity. There would also be no change in stormwater drainage facilities as the proposed project would not create additional stormwater runoff.

## Mitigation Measures

No mitigation is required because implementation of the proposed project would not result in any significant impacts on utilities and service systems.

| | | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less-than-Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XVII.** | **MANDATORY FINDINGS OF SIGNIFICANCE.** | | | | |
| a. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ❑ | ■ | ❑ | ❑ |
| b. | Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | ❑ | ■ | ❑ | ❑ |
| c. | Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | ❑ | ■ | ❑ | ❑ |

# Impact Evaluation

a. **Less than significant with mitigation**. The project has the potential to degrade the quality of the environment. However, implementation of the mitigation measures described in the preceding resource sections and listed in summary form in Chapter 1 would avoid or minimize significant impacts on these resources. This impact is considered less than significant with the mitigation measures applied.

b. **Less than significant with mitigation**. The proposed project would result in short-term construction-related impacts that all would be reduced to less-than-significant levels with the implementation of mitigation measures described above. The proposed project also has the potential to contribute to a cumulative effect on biological resources, including VELB and its habitat. Planned development in the vicinity of the proposed project, based on the land uses proposed in the General Plan, would also permanently affect biological resources, including habitat for VELB. Implementation of mitigation measures for the proposed project's effects on biological resources would reduce the

projects contribution to a cumulative effect to less-than-cumulatively-considerable levels. These measures are described in Section IV, Biological Resources, above, and listed in summary form in Chapter 1.

c. **Less than significant with mitigation**. As described throughout the preceding checklist sections, the proposed project would not result in any environmental impacts that would cause substantial adverse effects on human beings, either directly or indirectly, with the implementation of mitigation measures previously described. This impact is considered less than significant with the mitigation measures applied.

Chapter 4
# References Cited

## Printed References


Barr, C. B. 1991. *The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle: Desmocerus californicus dimorphus*. Sacramento, CA: U.S. Fish and Wildlife Service.

California Air Resources Board. 2008a. Ambient Air Quality Standards. Last Revised: April 1, 2008. Available: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed: April 2, 2008.

California Department of Conservation. 2009. Farmland Mapping & Monitoring Program. COUNTY PDF MAPS. Available: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx>. Accessed March 2009.California Department of Conservation. 2009. Farmland Mapping and Monitoring Program. County PDF Maps. File: fre06_e.pdf. File last modified 01/27/2009. 2006 data. Available: <ftp://ftp.consrv.ca.gov/pub/ dlrp/FMMP/pdf/2006>. Accessed: March 2009.

California Department of Finance. 2007. E-1 City-County Population Estimates. Last Updated : May 2008. Available: <http://www.dof.ca.gov/research/ demographic/reports/estimates/e-1_2006-07/>. Accessed: May 18, 2008.

California Department of Fish and Game. 2003. *The Vegetation Classification and Mapping Program; List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database.* September 2003 Edition. Wildlife and Habitat Data Analysis Branch. Sacramento, CA.

California Department of Food and Agriculture. 2004. Pest Ratings of Noxious Weed Species and Noxious Weed Seed. Last updated: March 9, 2004. Available: <http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm>. Accessed: September 2007.

California Department of Parks and Recreation. 1976. California Inventory of Historic Resources. The Resources Agency, Sacramento, CA.

———. 1996. California Historical Landmarks. The Resources Agency, Sacramento, CA.

California Department of Transportation. 1998. Technical Noise Supplement. October. Available: <http://www.dot.ca.gov/hq/env/noise/ publications.htm>. Accessed: July 30, 2007.

———. 2002. Standard Specifications for Construction of Local Streets and Roads. July. Sacramento, CA. Available: <http://www.dot.ca.gov/hq/ esc/oe/specs_html/2002_specs.html>. Accessed: July 30, 2007.

———. 2003. Statewide Stormwater Quality Practice Guidelines. May. CTSW-RT-02-009. Division of Environmental Analysis. Sacramento, CA.

———. 2006. Traffic Noise Analysis Protocol for New Highway Construction, Reconstruction, and Retrofit Projects. Division of Environmental Analysis. August. Available: <http://www.dot.ca.gov/hq/env/noise/>. Accessed: July 30, 2007.

———. 2007a. Scenic Highway Program. Eligible and Designated Routes. Available: < http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm>. Accessed: May 19, 2007.

———. 2007b. Scenic Highway Program. Scenic Highway System. Available: <http://www.dot.ca.gov/hq/LandArch/scenic_highways/ scenic_hwy.htm>. Accessed: May 19, 2008.

California Department of Water Resources. 2006. California's Groundwater Bulletin 118. San Joaquin Valley Groundwater Basin, Kings Subbasin 5.22-08. January 20. Available: <http://www.dpla2.water.ca.gov/publications/ groundwater/bulletin118/basins/pdfs_desc/5-22.08.pdf>. Sacramento, CA.

California Invasive Plant Council. 2006. California Invasive Plant Inventory, Appendix 1. Species Listed by Category. Available at: <http://www.cal-ipc.org/ip/inventory/pdf/Inventory2006.pdf>. Accessed: September 2007.

California Native Plant Society. 2007. On-line Inventory of Rare and Endangered Plants of California, v7-07c 7-09-07. Available: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed: September 2007.

California Natural Diversity Database. 2007. RareFind 3, version 3.1.0 (May 2007 update). Records search of Manning Avenue Bridge study area located on the Reedley USGS quadrangle and a 10-mile radius surrounding the study area. Sacramento CA: California Department of Fish and Game.

Central Valley Regional Water Quality Control Board. 2004. Water Quality Control Plan for the Tulare Lake Basin, Second Edition. Revised January 2004.

City of Reedley. 1991. *Kings Corridor Specific Plan Draft Environmental Impact Report.*

———. 1993. City of Reedley California General Plan 2012. Adopted by the City Council August 10, 1993. Available: <http://www.reedley.com/com_development-dept/PDF/general_plan_2012.pdf>. Accessed: January 2008.

———. 2000a. *Thresholds of Significance for the City of Reedley*. Resolution No. 2000-057. June.

———. 2000b. Reedley Redevelopment Agency Project Area map. Redevelopment Agency Project Area. Available: <http://www.reedley.com/publicworks/Maps/RDA-Area-Map.pdf>. Accessed: July 30, 2007.

———. 2002a. Rail Corridor Master Plan. Prepared by Collins & Schoettler Planning Consultants. Adopted November 26, 2002. Available: <http://www.reedley.com/com_development-dept/library.htm>. Accessed: June 20, 2008.

———. 2002b. Zoning Map. Zoning Districts. Available: <http://www.reedley.com/publicworks/Maps/zoning_map.pdf>. Accessed: July 30, 2007.

———. 2004. 2004 Average Daily Traffic Volumes Map. Public Works Department, Engineering Division. Available: <http://www.reedley.com/publicworks/library.htm>. Accessed: July 30, 2007.

———. 2006. Reedley Municipal Code. Last updated by ordinance 2006-11, passed October 10, 2006. Available: <http://66.113.195.234/CA/Reedley/index.htm>. Accessed: July 30, 2007 May and 19, 2008.

———. 2008a. *Manning Avenue Bridge Replacement Project Air Quality Technical Report.* January. Prepared by Jones & Stokes, Sacramento, California.

———. 2008b. *Manning Avenue Bridge Replacement Project Wetland Delineation Report.* October. Prepared by ICF Jones & Stokes, Sacramento, California.

———. 2008c. *Manning Avenue Bridge Replacement Project Historic Property Survey Report*. April. Prepared by ICF Jones & Stokes, Sacramento, California.

———. 2008d. Welcome to Reedley. Community. History. Available: <http://www.reedley.com/community-history.html>. Accessed: June 27, 2008.

———. 2008e. *Manning Avenue Bridge Replacement Project Water Quality Study*. March. Prepared by ICF Jones & Stokes, Sacramento, California.

———. 2008f. *Manning Avenue Bridge Replacement Project Noise Study Technical Report*. January. Prepared by Jones & Stokes, Sacramento, California.

———. 2009. *Manning Avenue Bridge Replacement Project Natural Environment Study*. March. Prepared by ICF Jones & Stokes, Sacramento, California.

Collins & Schoettler Planning Consultants. 2002. City of Reedley Rail Corridor Master Plan. Prepared for the City of Reedley. Adopted by the Reedley Planning Commission October 2002. Visalia, CA. Available: < http://www.reedley.com/com_development-dept/PDF/rail_corridor_MP.pdf>. Accessed: July 31, 2009.

Cornerstone Structural Engineering Group. 2006. Seismic Strategy & Bridge Rehabilitation Report. Manning Avenue Bridge over Kings River. Bridge No. 42C-0010. August. Prepared for the City of Reedley.

County of Fresno. 2000. Fresno County General Plan. Health and Safety Element. Noise. October.

———. 2007. County of Fresno–Public Works and Planning–Recycling and Solid Waste Disposal. Construction and Demolition (C&D) Debris Recycling. Available: <http://www.co.fresno.ca.us/departmentpage.aspx?id=5858>. Accessed: May 19, 2008.

Department of Toxic Substances Control. 2007. EnviroStor. Find Cleanup Sites and Hazardous Waste Permitted Facilities. Available: <http://www.envirostor.dtsc.ca.gov/public/>. Accessed: June 20, 2008.

Erickson, Gregg A. 2002. *Transportation Structures: Bats and Bridges Technical Bulletin* (Hitchhiker's Guide to Bat Roosts). California Department of Transportation, Sacramento, CA.

Federal Emergency Management Agency. 2001. Flood Insurance Rate Map (FIRM), Fresno County, California. Map Number: 06019C2705F. Map revised: July 19, 2001. Available: <http://map1.msc.fema.gov/idms/IntraView.cgi?ROT=0&O_X=6034&O_Y=5673&O_ZM=0.078072&O_SX=857&O_SY=511&O_DPI=400&O_TH=70447693&O_EN=56215229&O_PG=1&O_MP=1&CT=0&DI=0&WD=11891&HT=10247&JX=995&JY=572&MPT=0&MPS=0&ACT=1&KEY=70447023&ITEM=1&PICK_VIEW_CENTER.x=475&PICK_VIEW_CENTER.y=100&R1=VIN>.

Federal Highway Administration. 2006. *FHWA Highway Construction Noise Handbook.* Washington, DC.

Fire Departments Net. 2008. Reedley Fire Department-Reedley, California. Available: <http://www.firedepartments.net/California/Reedley/Reedley FireDepartment.html.> Accessed: May 19, 2008.

H. T. Harvey and Associates (with Greg Tartarian and Elizabeth Pierson). 2004. *California Bat Mitigation—Techniques, Solutions, and Effectiveness.* Prepared for the California Department of Transportation, Office of Biological Studies and Technical Assistance, Sacramento, CA ,and Gene Trapp, California State University Foundation, Sacramento, CA.

Huntington, G. L. 1971. *Soil Survey of the Eastern Fresno Area, California.* U.S. Department of Agriculture, Soil Conservation Service in cooperation with the University of California Agricultural Experiment Station. U.S. Government Printing Office, Washington, DC.

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Rancho Cordova, CA: California Department of Fish and Game, Inland Fisheries Division. Kings Canyon Unified School District. 2008. Kings Canyon Unified School District home page. Available: <http://www.kcusd.com/>. Accessed: May 19, 2008.

Kings River Water Association. 2006. About Us. Available: <http://www.kingsriverwater.org/about_us/index.php>. Accessed: May 19, 2008.

Knopf Engineering. 1991. Kings River Corridor Specific Plan. Adopted January 8, 1991. Prepared for City of Reedley.

Local Government Commission. 1991. The Ahwahnee Principles. Available: <http://www.lgc.org/ahwahnee/principles.html>. Accessed: June 20, 2008.

Office of Historic Preservation. 2004. Directory of Properties in the Historic Property Data File for Fresno County. August 2. Office of Historic Preservation, Sacramento, CA. On file at Southern San Joaquin Valley Information Center, California Historical Resources Information System, Bakersfield.

Parikh Consultants, Inc. 2007. *Geotechnical Engineering Investigation. Kings River Bridge at Manning Avenue (Bridge No. 42C-00100). City of Reedley, Fresno County, CA.* August. Prepared for Quincy Engineering, Inc., Sacramento, CA.

Quincy Engineering, Inc. 2007. *Feasibility Study. Kings River Bridge at Manning Avenue.* Bridge No. 42C-0010. January. Prepared for City of Reedley Department of Public Works, Reedley, CA.

Quincy Engineering, Inc. 2008. *Supplemental Feasibility Study. Kings River Bridge at Manning Avenue.* Bridge No. 42C-0010. March. Prepared for City of Reedley Department of Public Works, Reedley, CA.

Reedley College. 2008. The College's History. Available: http://www.reedleycollege.edu/about/Collegeshistory.htm. Accessed: May 19, 2008.

Remsen, J. V. 1978. *Bird Species of Special Concern in California: An Annotated List of Declining or Vulnerable Bird Species.* (Wildlife Management Branch Administrative Report No. 78-1.) California Department of Fish and Game, Nongame Wildlife Investigations. Sacramento, CA.

San Joaquin Valley Air Pollution Control District, Mobile Source/CEQA Section of the Planning Division. 2002, as revised. *Guide for Assessing and Mitigating Air Quality Impacts*. January 10. Fresno, CA. Adopted: August 20, 1998.

State Water Resources Control Board. 2006. Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments. SWRCB approved October 25, 2006. Available: http://www.waterboards.ca.gov/tmdl/docs/303dlists2006/final/r5_final303dlist.pdf. Accessed: 6/12/2007.

U.S. Environmental Protection Agency. 2005. EPA Region 9: Corrective Action. Baseline Facilities in Northern California. Available: <http://yosemite1.epa.gov/r9/r9coract.nsf/facilities?readform&GeographicArea=Northern+Ca>. Accessed: May 19, 2008.

U.S. Fish and Wildlife Service. 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. July 9. Sacramento, CA.

U.S. Fish and Wildlife Service. 2007. List of Endangered and Threatened Species That May Occur in or Be Affected by Projects on the Reedley Quadrant and in Fresno County. Available: <http://sacramento.fws.gov/es/spp_list.htm>. Accessed: April 20, 2007.

Williams, D. F. 1986. *Mammalian Species of Concern in California*. State of California. The Resources Agency. Sacramento, CA: California Department of Fish and Game.

# Personal Communications

Avila, Cathy. Principal in Charge. Avila & Associates, Walnut Creek, CA. June 2007—Telephone conversation with Mike Eng, Environmental Planner, Jones & Stokes, about draft hydraulics study prepared for project.

Barber, Daniel. Air Quality Specialist. San Joaquin Valley Air Pollution Control District, Fresno, CA. March 14, 2007—telephone conversation with Shannon Hatcher of Jones & Stokes, regarding Rule 9510.

Cadrett, John. CEQA Coordinator. San Joaquin Valley Unified Air Pollution Control District, Modesto, CA. June 15, 2005—telephone conversation with Shannon Hatcher of Jones & Stokes regarding, compliance with revised SJVAPCD Regulation VIII.

Young, Susan M., Public Land Management Specialist, California State Lands Commission(SLC). November 15, 2007—Letter to Lisa Webber of Jones & Stokes regarding review of proposed Manning Avenue Bridge Replacement Project and stating that the project extends into lands under the leasing jurisdiction of the SLC and that an application for lease of these sovereign lands must be submitted to the SLC.

Chapter 5
# List of Preparers

## ICF Jones & Stokes

| | |
|---|---|
| Debbie Loh | Project Director |
| Claire Bromund | Project Manager, CEQA Analysis |
| Amy Fransen | Project Coordinator, CEQA Analysis |
| Erin Hitchcock | Biological Resources |
| Lisa Webber | Botanical Resources |
| Christiaan Havelaar | Archaeological Resources |
| Kathryn Haley | Architectural Resources |
| Nate Martin | Water Quality |
| Lindsay Christensen | Air Quality |
| Dana Lodico | Noise |
| Alex Angier | CAD |
| Senh Saelee | Graphics |
| William O'Daly | Technical Editor |
| Jody Job | Publications Specialist |

## City of Reedley

| | |
|---|---|
| Rocky Rogers | Public Works Director |
| Dana Ritschel | City Engineer, Project Manager |

## Quincy Engineering, Inc.

| | |
|---|---|
| Mark Reno | Project Engineer |
| Greg Young | Project Engineer |

Appendix A

# Preliminary Design Drawings

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | | | 1 | XX |

INDEX OF SHEETS


No. ROADWAY PLANS
1. TITLE SHEET
2–3. TYPICAL CROSS SECTIONS
4–7. LAYOUT
8–11. PROFILE AND SUPER ELEVATIONS DIAGRAM PROFILE
12. CONSTRUCTION DETAILS

No. STRUCTURE PLANS


CITY OF REEDLEY

# DEPARTMENT OF PUBLIC WORKS

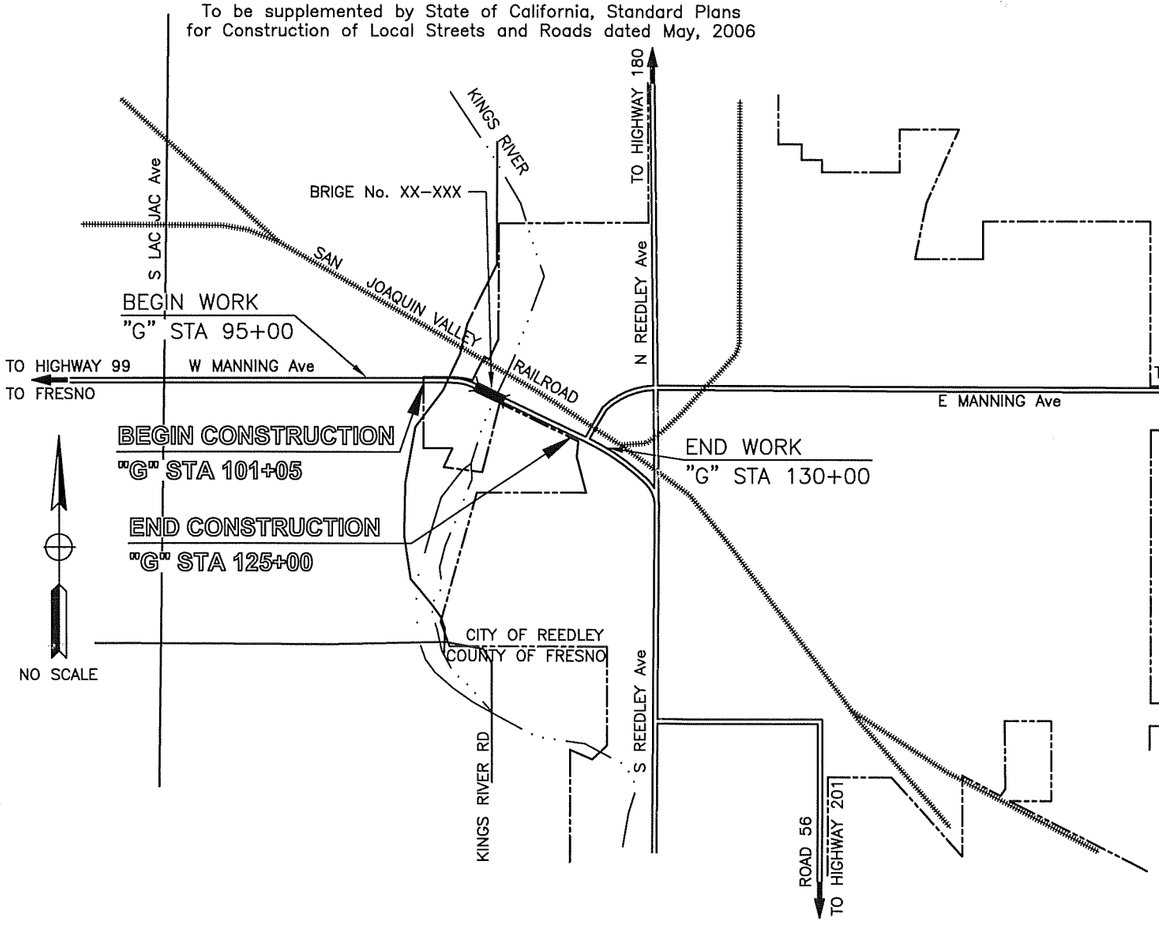
## PROJECT PLANS FOR CONSTRUCTION ON

# KINGS RIVER BRIDGE ON MANNING AVE

## IN THE CITY OF REEDLEY FROM X.X MI EAST AND X.X MI WEST OF KINGS RIVER

## FEDERAL-AID BRIDGE REPLACEMENT PROJECT NO. BHLS 5216(028)

To be supplemented by State of California, Standard Plans for Construction of Local Streets and Roads dated May, 2006




BEGIN CONSTRUCTION
"G" STA 130+00


LOCATION MAP

65% SUBMITTAL

PRELIMINARY

DEPUTY DIRECTOR OF PUBLIC WORKS — DATE

REGISTERED PROFESSIONAL ENGINEER — No. ____ Exp. ____ CIVIL — STATE OF CALIFORNIA

Project Engineer — Date
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER — MARK L. RENO — No. C47756 Exp. 12-31-07 CIVIL — STATE OF CALIFORNIA

Plans Approval Date

| PROJECT ENGINEER | DATE | PROJECT MANAGER | DATE |
|---|---|---|---|
| MARK RENO | | STEVE MELLON | |

The Contractor shall possess the Class (or classes) of license as specified in the "Notice to Contractors".


CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS
1733 9th STREET REEDLEY, CA 93654

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827


Contract No

LAST REVISION 00-00-00

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

NOTES:
1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPER ELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

**65% SUBMITTAL**

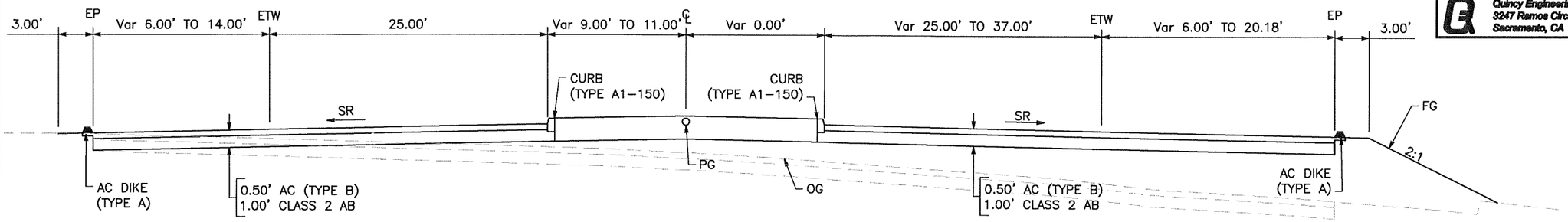
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

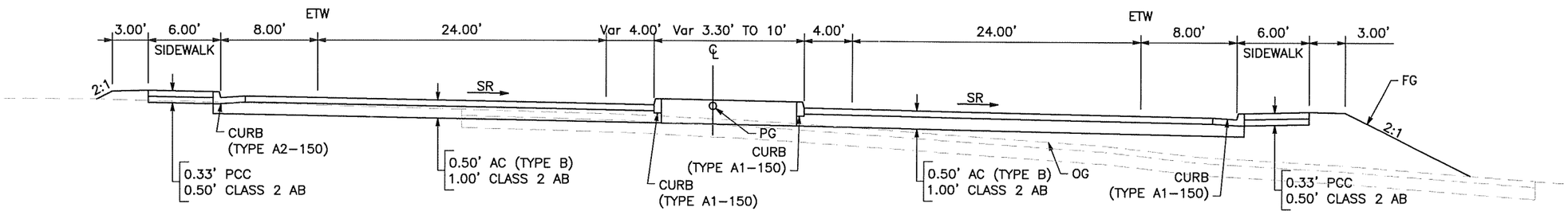
*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827




"G" LINE
STA "G" EB 103+85.00 TO 104+80.00
WB 101+05.00 TO 104+80.00

PRELIMINARY




"G" LINE
STA "G" 104+80.00 TO 110+00.00

**LEGEND**
SR = SUPERELEVATION RATE

**DESIGN DESIGNATION**
T.I. =
T =
V = 60 MPH
Rnative =
2004 ADT = 19,500
2014 ADT = 25,000

# TYPICAL CROSS SECTIONS

NO SCALE

X-1

| REVISED BY | DATE | GM | CALCULATED/ DESIGNED BY | CHECKED BY |
|---|---|---|---|---|
| REVISED | | | | |

PROJECT ENGINEER: MICHAEL A. SANCHEZ

AGENCY NAME: CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00 R201zX1.dwg, Tue, 19 Jun 2007 - 4:29pm, gamedam

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

**65% SUBMITTAL**

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

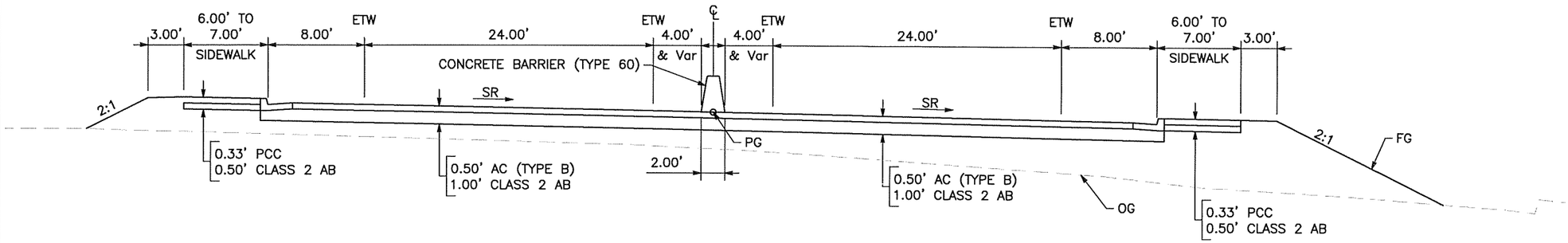
*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

*Quincy Engineering, Inc.*
*3247 Ramos Circle*
*Sacramento, CA 95827*

| REVISED BY | DATE | GM | CALCULATED/ DESIGNED BY | CHECKED BY |
|---|---|---|---|---|
| REVISED | | | | |

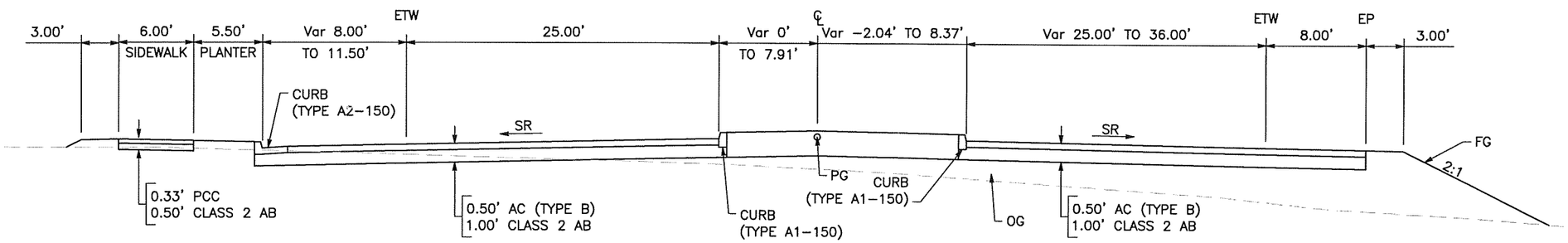
PROJECT ENGINEER
MICHAEL A. SANCHEZ

AGENCY NAME
CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS




"G" LINE
STA "G" 110+00.00 TO BB 110+90.00
EB 115+35.00 TO 116+00.00

PRELIMINARY




"G" LINE
STA "G" 116+00.00 TO 123+60.00 WB
116+00.00 TO 125+00.00 EB

# TYPICAL CROSS SECTIONS

NO SCALE

X-2

LAST REVISION 00-00-00

R2201r22.dwg, Tue, 19 Jun 2007 - 4:26pm, gsmedm

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

**65% SUBMITTAL**

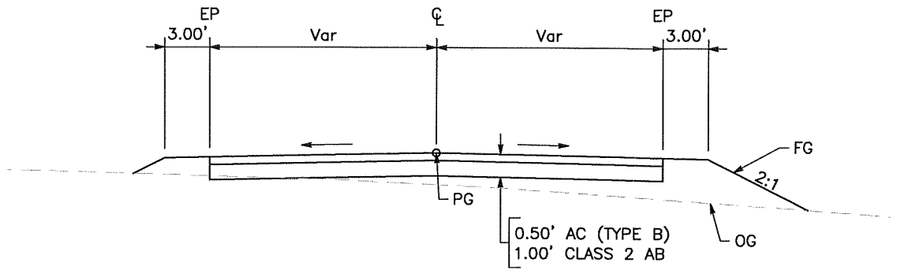
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

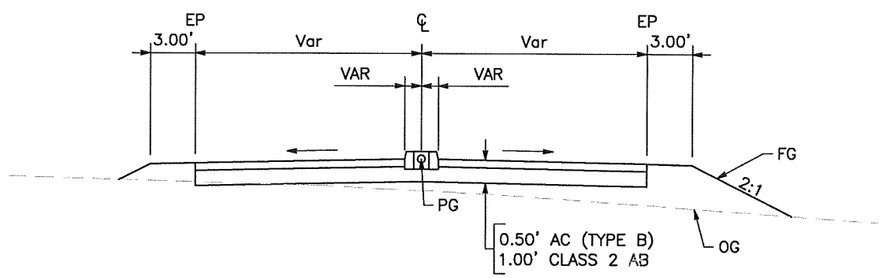
PLANS APPROVAL DATE

*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

*Quincy Engineering, Inc.*
*3247 Ramos Circle*
*Sacramento, CA 95827*




**"DWY1, DWY 2" LINE**
STA "DWY1" 20+00.00 TO 21+25.00
STA "DWY2" 10+00.00 TO 112+00.00




**"K" LINE**
STA "K" 17+50.00 TO 20+00.00

PRELIMINARY

# TYPICAL CROSS SECTIONS

NO SCALE

X-3

| AGENCY NAME | PROJECT ENGINEER | CALCULATED/ DESIGNED BY | GM | DATE | REVISED BY |
|---|---|---|---|---|---|
| CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS | MICHAEL A. SANCHEZ | CHECKED BY | | | REVISED |

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00

R2301723.dwg, Tue, 19 Jun 2007 - 4:28pm, garnekm

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | ——— | ——— |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

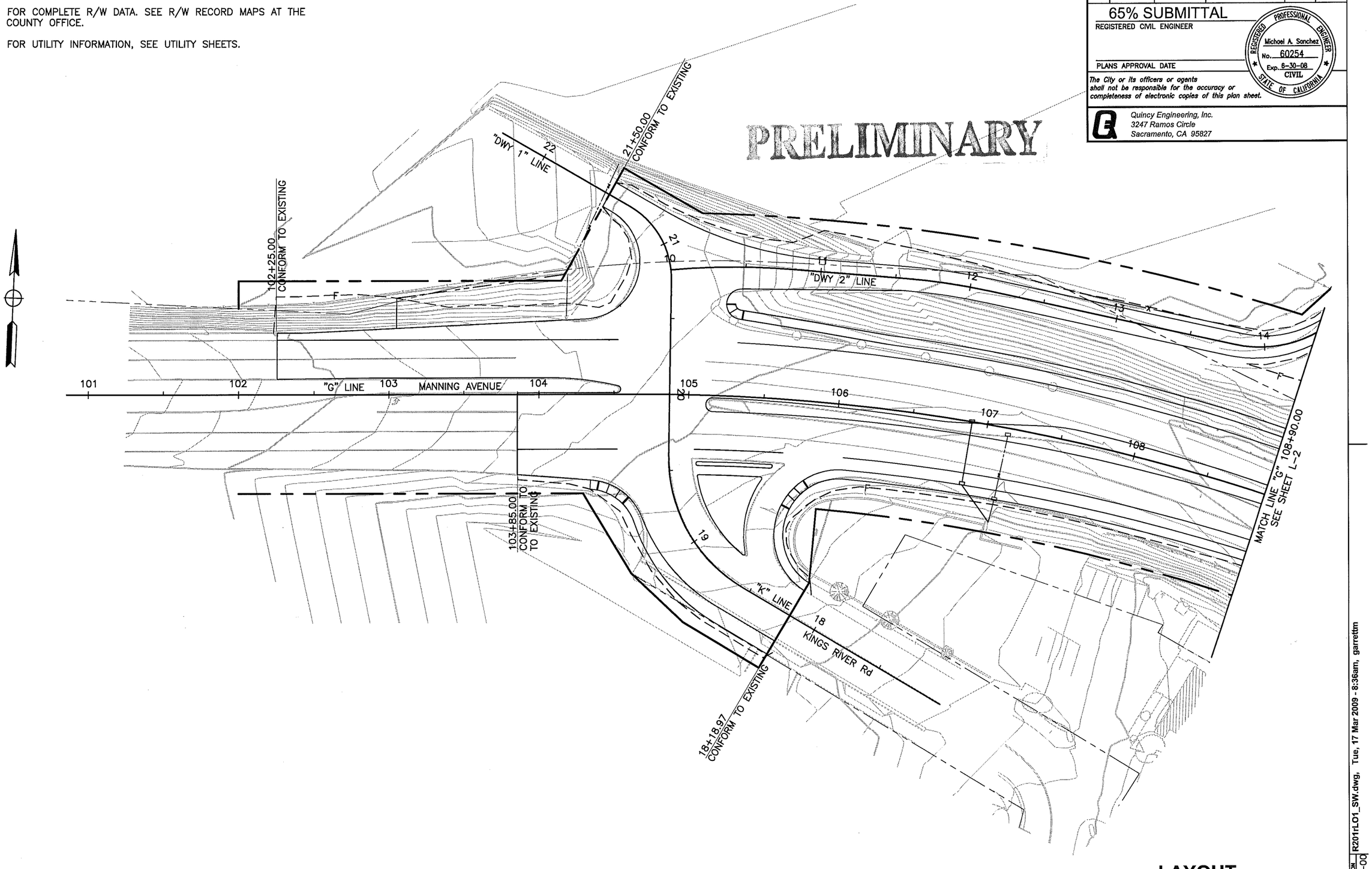
REGISTERED PROFESSIONAL ENGINEER — Michael A. Sanchez — No. 60254 — Exp. 6-30-08 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




## LAYOUT

SCALE 1" = 30'

L-1

| AGENCY NAME | PROJECT ENGINEER | DATE | BY | REVISED |
|---|---|---|---|---|
| CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS | MICHAEL A. SANCHEZ | GM | | REVISED |
| | | CALCULATED/ DESIGNED BY | | CHECKED BY |

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00

R201rLO1_SW.dwg, Tue, 17 Mar 2009 - 8:36am, garrettm

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | --- | | ---- | ---- |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

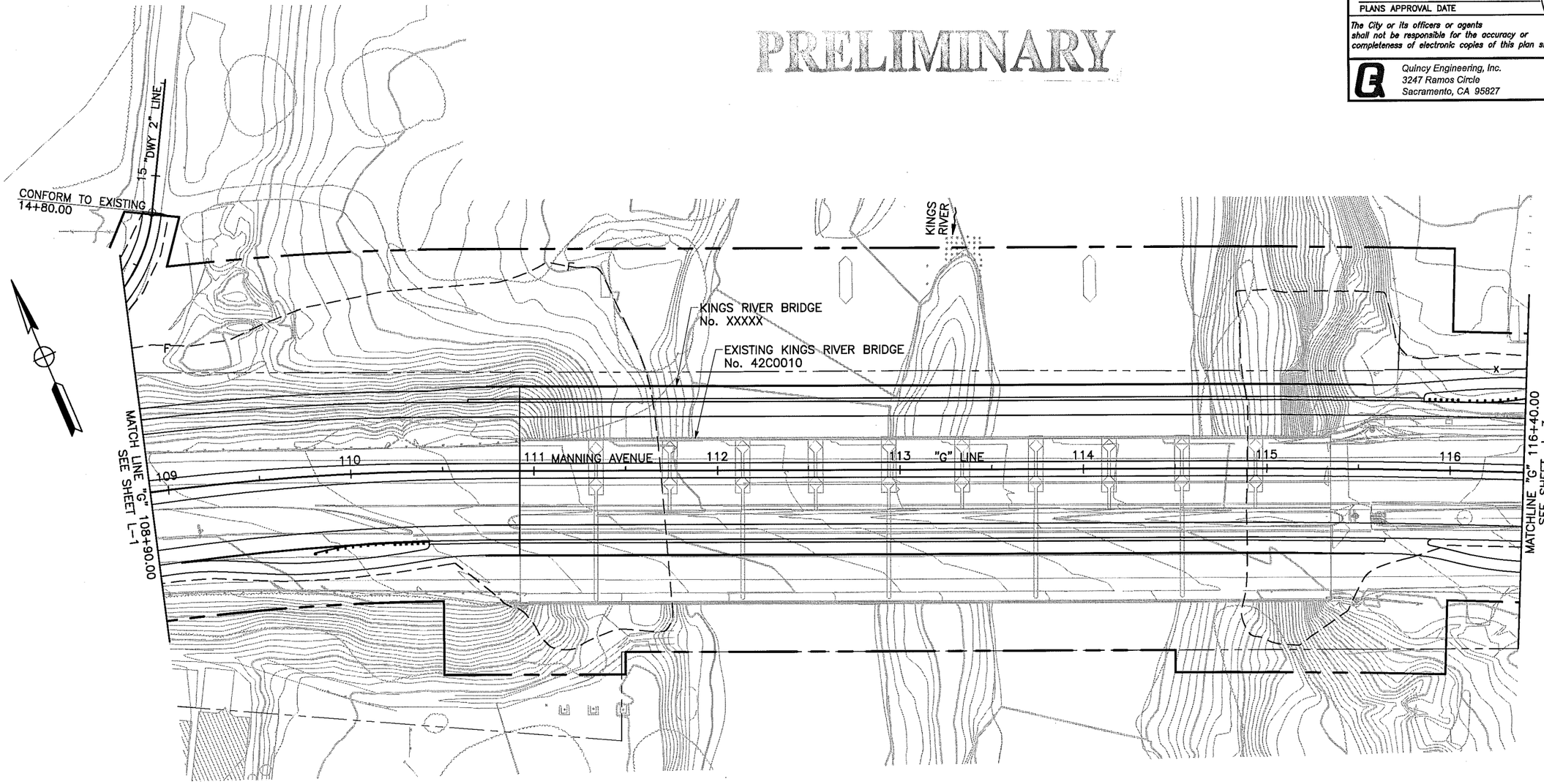
REGISTERED PROFESSIONAL ENGINEER
Michael A. Sanchez
No. 60254
Exp. 6-30-08
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




## LAYOUT
SCALE 1" = 30'

L-2

| AGENCY NAME | PROJECT ENGINEER | DATE | BY | CALCULATED/ DESIGNED BY | CHECKED BY |
|---|---|---|---|---|---|
| CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS | MICHAEL A. SANCHEZ | | REVISED BY | | |

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

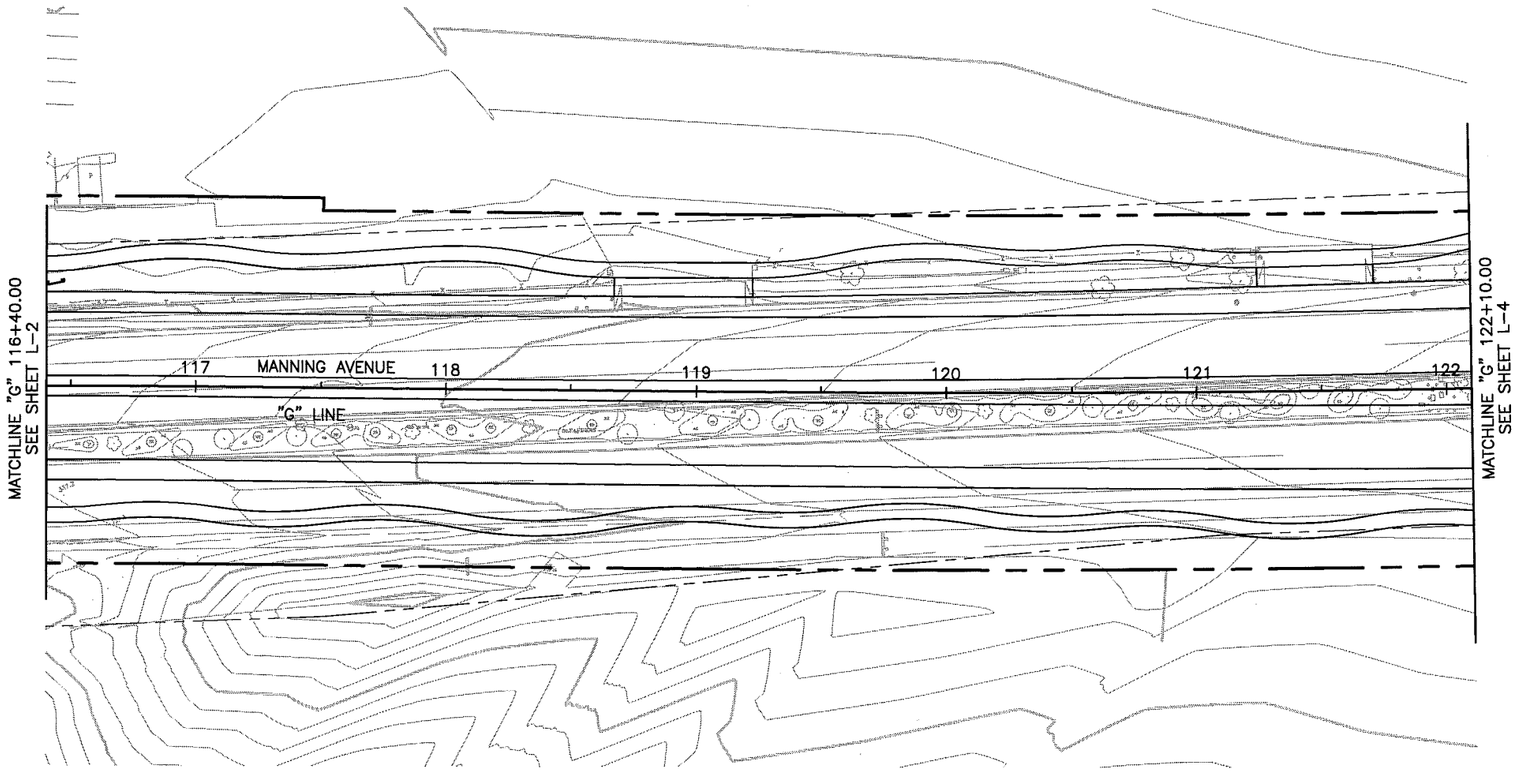
CU 00000 | EA 000000

LAST REVISION 00-00-00 | R201rLO2_SW.dwg, Tue, 17 Mar 2009 - 8:38am, garrettm

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

PRELIMINARY




| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | --- | | ---- | ---- |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
Michael A. Sanchez
No. 60254
Exp. 6-30-08
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*


Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827


| DATE | REVISED | BY |
|---|---|---|
| | REVISED | |

CALCULATED/DESIGNED BY
CHECKED BY
GM

PROJECT ENGINEER
MICHAEL A. SANCHEZ

AGENCY NAME
CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

## LAYOUT

SCALE 1" = 30'

L-3

LAST REVISION 00-00-00

R201rLO3_SW.dwg, Tue, 17 Mar 2009 - 9:03am, garrettm

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000

EA 000000

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | --- | | ---- | ---- |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

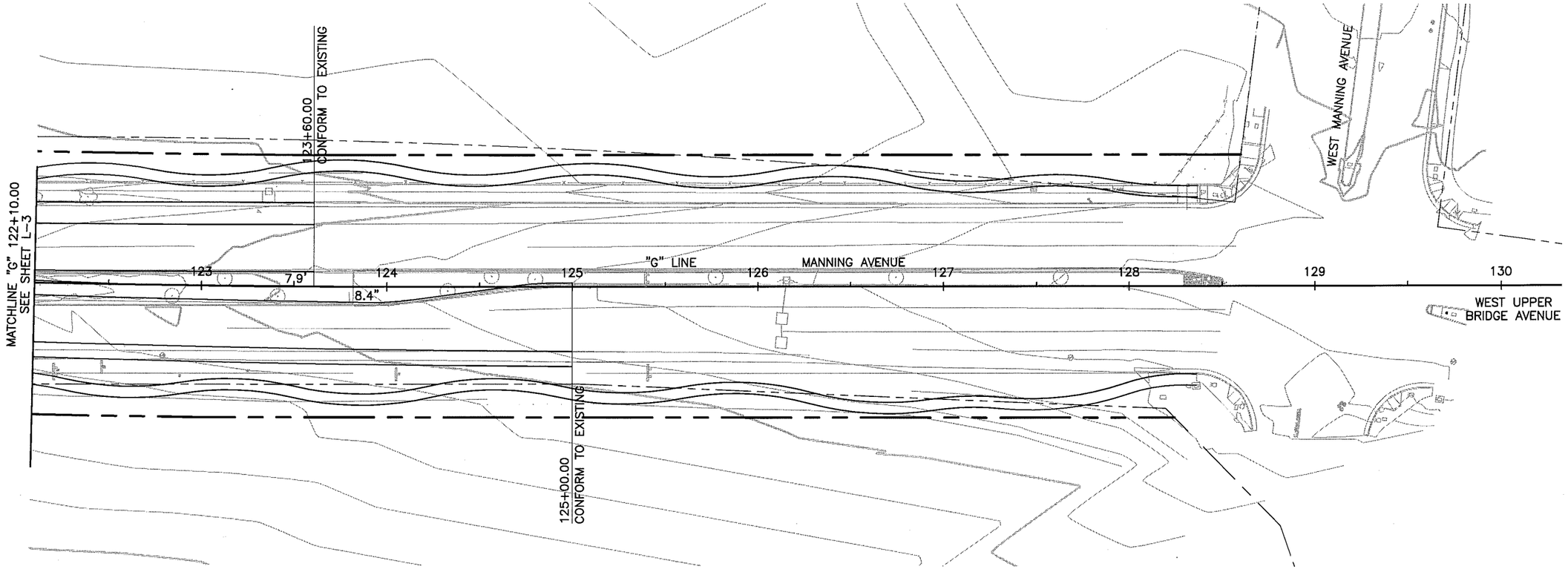
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael A. Sanchez
No. 60254
Exp. 6-30-08
CIVIL
STATE OF CALIFORNIA

*The City or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




**LAYOUT**

SCALE 1" = 30'

**L-4**

| DATE | REVISED BY |
|---|---|
| | REVISED |

CALCULATED/DESIGNED BY
GM

CHECKED BY

PROJECT ENGINEER
MICHAEL A. SANCHEZ

AGENCY NAME
CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

LAST REVISION 00-00-00 R2017LO4_SW.dwg, Tue, 17 Mar 2009 - 9:06am, garrettm

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000

EA 000000

PRELIMINARY

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

65% SUBMITTAL

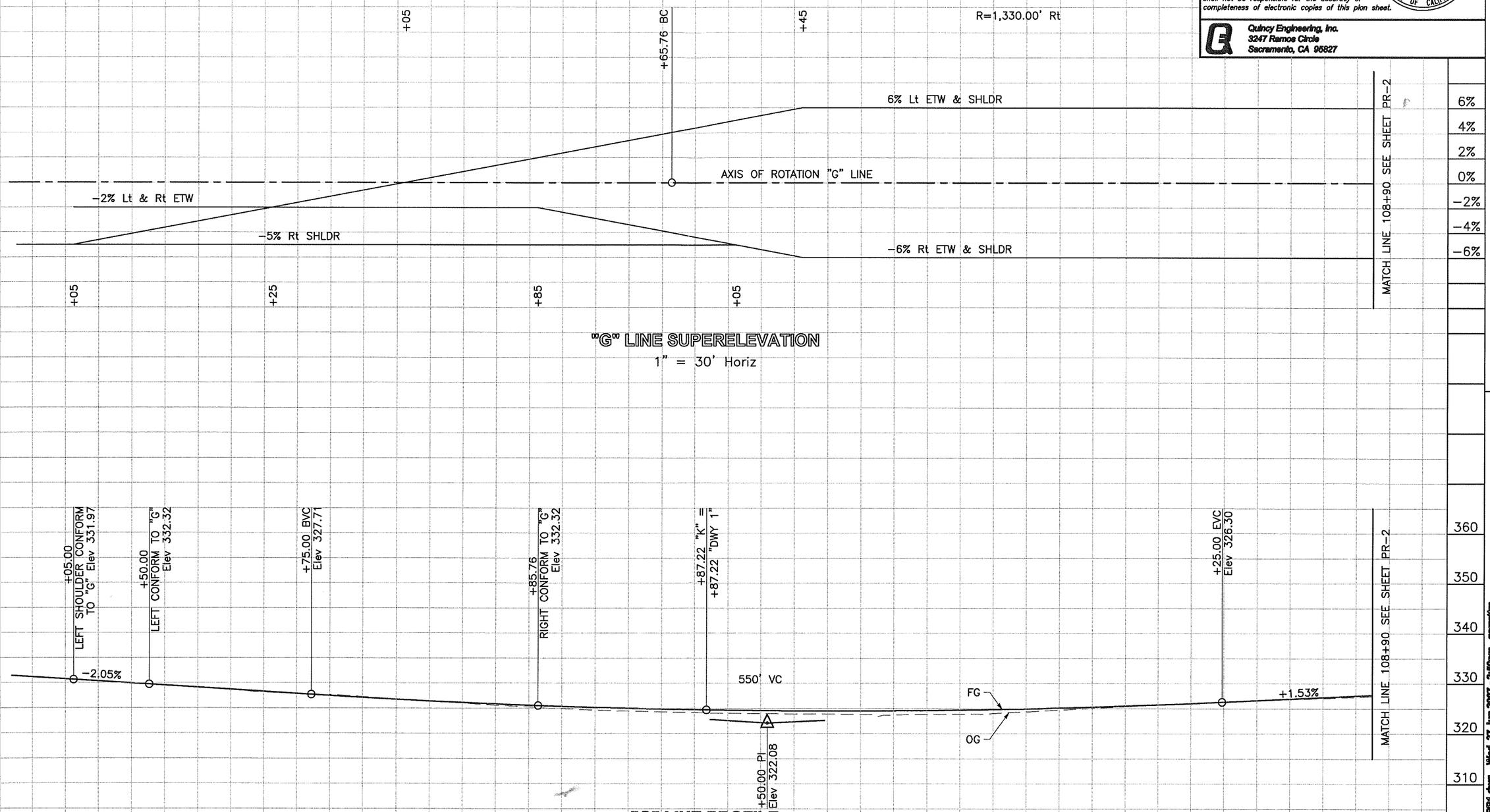
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827




"G" LINE SUPERELEVATION

1" = 30' Horiz




"G" LINE PROFILE

1" = 30' Horiz
1" = 10' Vert

# PROFILES AND SUPER ELEVATION DIAGRAM

SCALE AS SHOWN

PR-1

101 102 103 104 105 106 107 108 109

AGENCY NAME: CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

PROJECT ENGINEER: MICHAEL A. SANCHEZ

CALCULATED/DESIGNED BY | CHECKED BY | GM | DATE | REVISED BY | REVISED

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00

R2201rPR1.dwg, Wed, 27 Jun 2007 - 2:50pm, gamedm

PRELIMINARY

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

**65% SUBMITTAL**

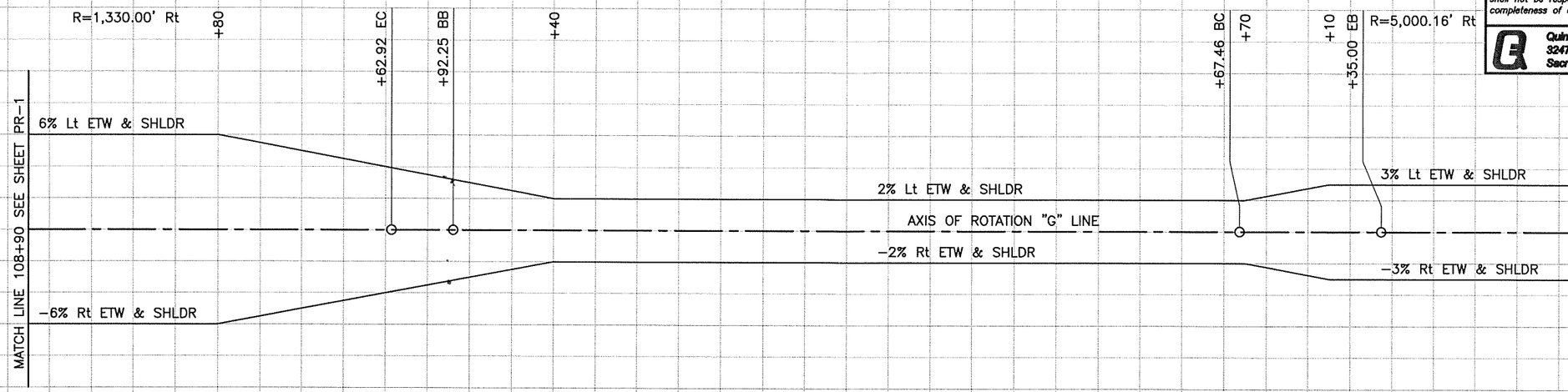
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — — — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

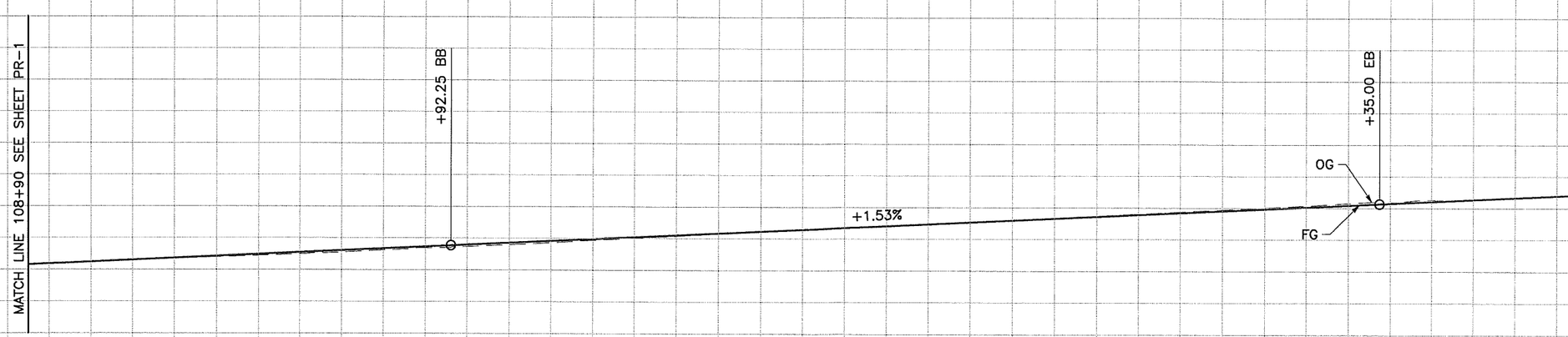
*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827




"G" LINE SUPERELEVATION

1" = 30' Horiz




"G" LINE PROFILE

1" = 30' Horiz
1" = 10' Vert

# PROFILES AND SUPER ELEVATION DIAGRAM

SCALE AS SHOWN

PR-2

| DATE | REVISED BY | REVISED |
|---|---|---|
| | | |

CALCULATED/DESIGNED BY

CHECKED BY

GM

PROJECT ENGINEER
MICHAEL A. SANCHEZ

AGENCY NAME
CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000

EA 000000

LAST REVISION 00-00-00

R2301\PR2.dwg, Wed, 27 Jun 2007 - 2:51pm, garnold

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

# PRELIMINARY

**65% SUBMITTAL**

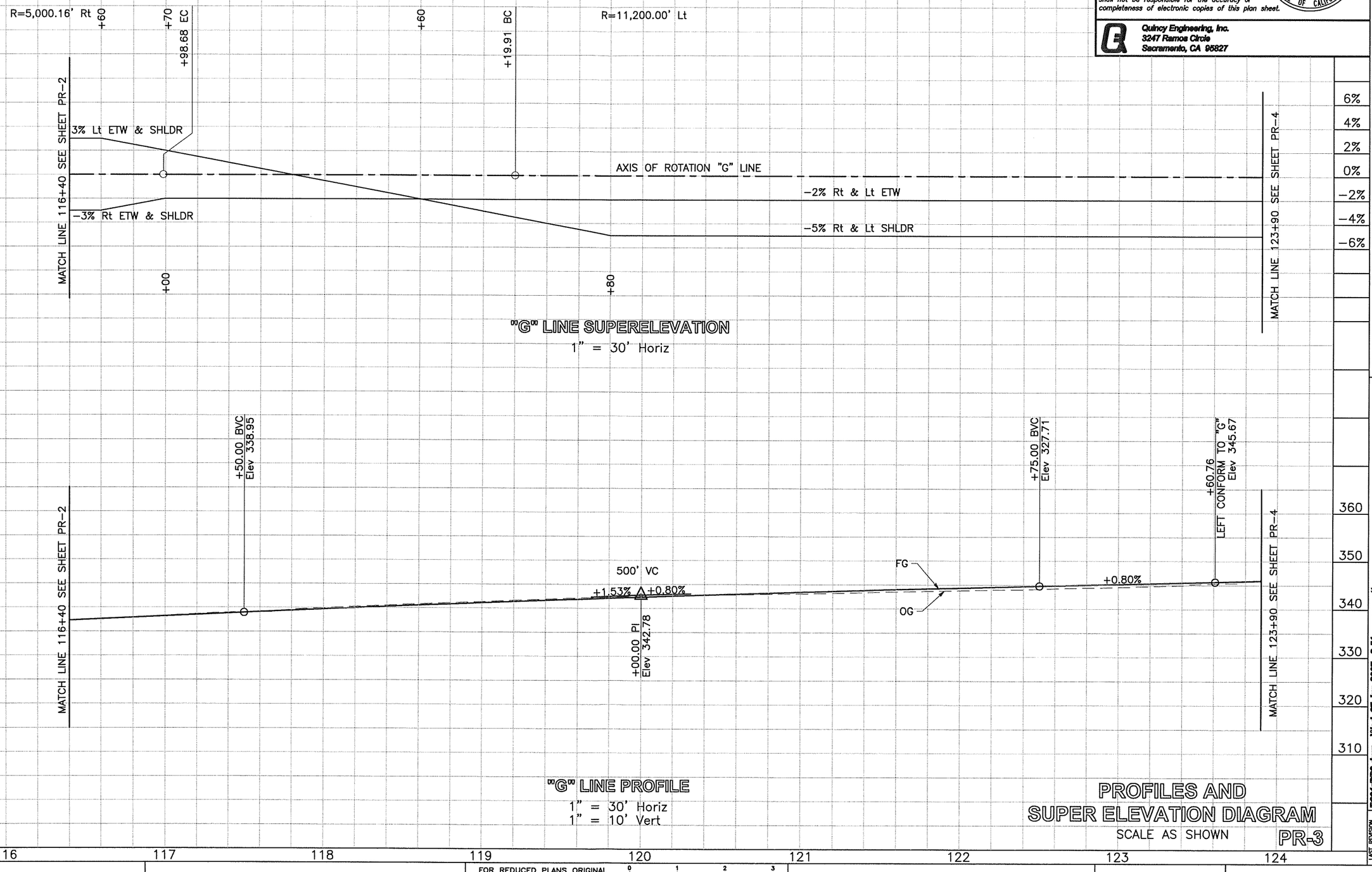
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*


**Quincy Engineering, Inc.**
3247 Ramos Circle
Sacramento, CA 95827


## "G" LINE SUPERELEVATION

1" = 30' Horiz




## "G" LINE PROFILE

1" = 30' Horiz
1" = 10' Vert

## PROFILES AND SUPER ELEVATION DIAGRAM

SCALE AS SHOWN

PR-3

116 117 118 119 120 121 122 123 124

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

| DATE | REVISED BY | REVISED |
|---|---|---|
| | | |

CALCULATED/DESIGNED BY: —
CHECKED BY: MZ

PROJECT ENGINEER: MICHAEL A. SANCHEZ

AGENCY NAME: CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

LAST REVISION 00-00-00

R201rPR3.dwg, Wed, 27 Jun 2007 - 2:51pm, gsmeldon

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

**65% SUBMITTAL**

REGISTERED CIVIL ENGINEER

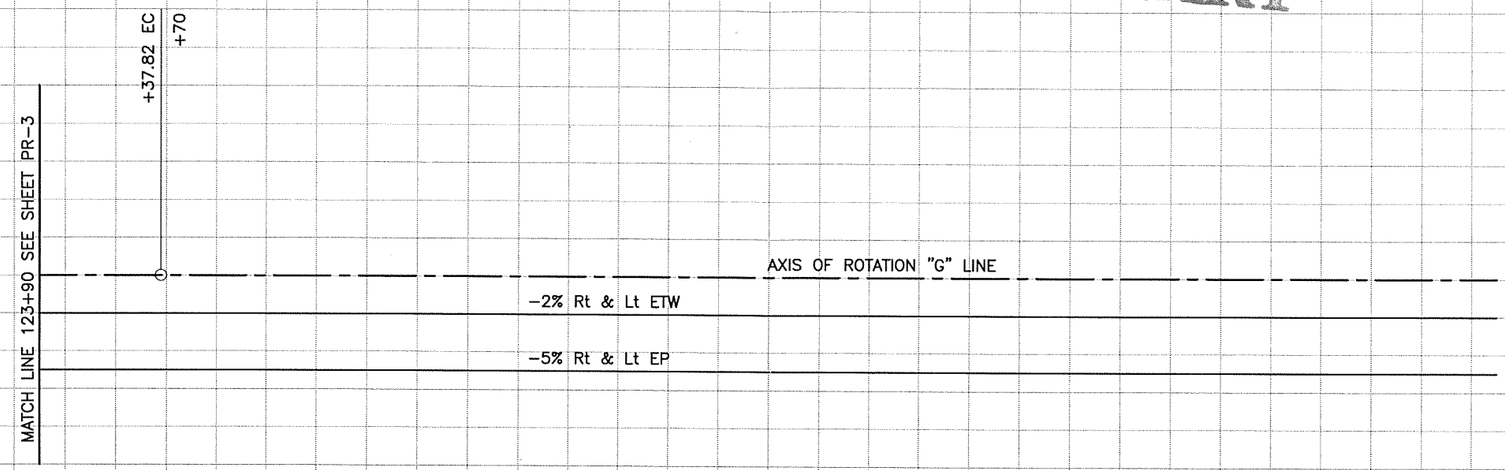
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — — — CIVIL — STATE OF CALIFORNIA

*The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

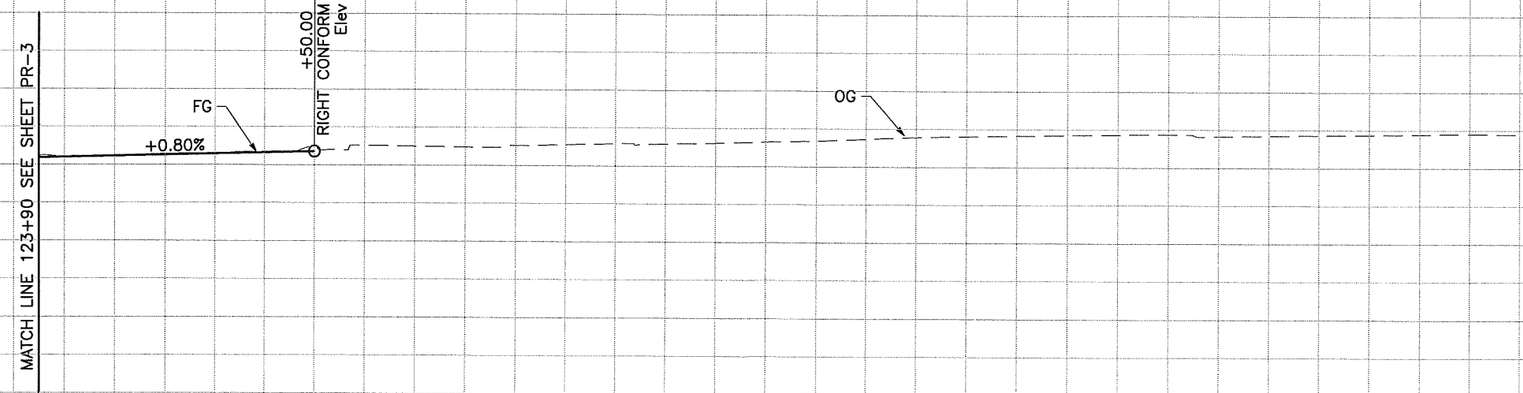

*Quincy Engineering, Inc.*
*3247 Ramos Circle*
*Sacramento, CA 95827*


PRELIMINARY




## "G" LINE SUPERELEVATION

1" = 30' Horiz




## "G" LINE PROFILE

1" = 30' Horiz
1" = 10' Vert

123 124 125 126 127 128 129 130 131

# PROFILES AND SUPER ELEVATION DIAGRAM

SCALE AS SHOWN

PR-4

| REVISED BY | DATE | GM | CALCULATED/ DESIGNED BY | CHECKED BY |
|---|---|---|---|---|
| REVISED | | | | |
| 6% | | | | |
| 4% | | | | |
| 2% | | | | |
| 0% | | | | |
| -2% | | | | |
| -4% | | | | |
| -6% | | | | |

PROJECT ENGINEER
MICHAEL A. SANCHEZ

AGENCY NAME
CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00

R2201rPRA.dwg, Wed, 27 Jun 2007 - 2:52pm, gsmeldm

Appendix B

# SJVAPCD Dust Control Plan

San Joaquin Valley
Air Pollution Control District

# San Joaquin Valley Air Pollution Control District
# Regulation VIII – Fugitive PM10 Prohibitions
# Dust Control Plan

**Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*** requires the owner or operator of a construction project to submit a Dust Control Plan to the District if at anytime the project involves:

- Residential developments of ten (10) or more acres of disturbed surface area,
- Non-residential developments of five (5) or more acres of disturbed surface area, or
- Relocation of more than 2,500 cubic yards per day of materials on at least three (3) days of the project.

A Dust Control Plan identifies the fugitive dust sources at the construction site and describes all of the fugitive dust control measures that will be implemented before, during, and after any dust generating activity for the duration of the project. One Dust Control Plan may cover a single project or multiple projects at different sites where construction will commence within the following 12 months.

The District will review and approve, conditionally approve, or disapprove the Dust Control Plan within 30 days of submittal. **Construction activities shall not commence until the Dust Control Plan has been approved or conditionally approved.** An owner or operator must also provide written notification to the District via fax or mail within 10 days prior to the commencement of earthmoving activities. A copy of the approved Dust Control Plan must be retained at the project site and made available upon request by a District inspector.

At least one key individual representing the owner or operator, or any person who prepares a Dust Control Plan must complete a Dust Control Training Course presented by the District. Please contact the District to find out when courses are being offered.

Regardless of whether a District-approved Dust Control Plan is in place or not, the owner or operator is required to comply with all requirements of the applicable rules under Regulation VIII and the District's Rules and Regulations at all times.

Submit the Dust Control Plan to the District's Compliance Division at the office listed below:

| | |
|---|---|
| For San Joaquin, Stanislaus, and Merced Counties: | **Northern Region Office**<br>4230 Kiernan Avenue, Suite 130<br>Modesto, CA 95356<br>(209) 557-6400 FAX (209) 557-6475 |
| For Madera, Fresno, and Kings Counties: | **Central Region Office**<br>1990 East Gettysburg Avenue<br>Fresno, CA 93726<br>(559) 230-5950 FAX (559) 230-6062 |
| For Tulare County and the valley portion of Kern County | **Southern Region Office**<br>2700 "M" Street, Suite 275<br>Bakersfield, CA 93301<br>(661) 326-6900 FAX (661) 326-6985 |

***www.valleyair.org***

# Dust Control Plan
# Section 1 – General Information – Page 1

## 1-A Project Name and Location

Project Name: _____

Project Address: _____

Major X-Streets: _____

City: _____ County: _____

Section(s): _____ Township: _____ Range: _____

Expected Construction Start Date: _____ End Date: _____

## 1-B Contacts

Report the names, addresses, and phone numbers of persons and owners or operators responsible for the preparation, submittal, and implementation of the Dust Control Plan and responsible for the dust generating operation and dust control applications. (Rule 8021 Sec. 6.3.6.1)

**Property Owner:** _____

Address: _____

City / State / Zip: _____

Phone: _____ Fax: _____

**Developer:** _____

Address: _____

City / State / Zip: _____

Contact Person: _____

Phone: _____ Fax: _____

**General Contractor:** _____

Address: _____

City / State / Zip: _____

Contact Person: _____

Phone: _____ Fax: _____

**This Dust Control Plan was prepared by:**

Name: _____

Title: _____

Company Name: _____

Address: _____

City / State / Zip: _____

Phone: _____ Fax: _____

Date training completed: _____ Training Location: _____

# Section 1 – General Information – Page 2

**Project Name:** _____

## 1-C Contractors

Provide the names, addresses, and phone numbers of the contractors involved in dust generating activities **or** performing dust control as part of this project. (Rule 8021 Sec. 6.3.6.1)

**1.** _____

_____

**2.** _____

_____

**3.** _____

_____

**4.** _____

_____

**5.** _____

_____

## 1-D Who will have the primary responsibility for implementing this Dust Control Plan?

(Rule 8021 Sec 6.3.6.1)

☐ **Property Owner** ☐ **Developer** ☐ **General / Prime Contractor**

☐ **Sub-Contractor(s)** ☐ **Other:** _____

**Primary Project Contact:** _____

Title: _____

Company Name: _____

Address: _____

City / State / Zip: _____

On-Site Phone: _____ Fax: _____

Mobile Phone: _____ Pager: _____

## 1-E Provide a brief description of the Project's Operations.

_____

_____

_____

_____

_____

# Dust Control Plan
# Section 2 – Plot Plan – Page 1

**Project Name:** _____

## 2-A Plot Plan

A plot plan identifies the type and location of each project. Attach appropriately sized maps with the project boundaries outlined or use the space in sections 2-B or 2-C to draw a plot plan. Attached maps may include tract maps, site maps, and topographic maps. Use the checklist below to make sure all areas have been identified on the plot plan. (Rule 8021 Sec. 6.3.6.2 & 6.3.6.5)

**Identify the relative locations of actual and potential sources of fugitive dust emissions.**

- ☐ Bulk material handling and storage areas.
- ☐ Paved and unpaved access roads, haul roads, traffic areas, and equipment storage yards.
- ☐ Exit points where carryout and trackout onto paved public roads may occur.
- ☐ Water supply locations if water application will be used for controlling visible dust emissions.

**Identify the relative locations of sensitive receptors within ¼ mile of the project.** (Rule 4102 Sec. 4.1)

- ☐ No sensitive receptors within ¼ mile of the project.
- ☐ Residential areas, schools, day care, churches, hospitals, nursing facilities, commercial, retail, etc.
- ☐ Freeways, roads, or traffic areas that may be affected by the dust generating activities.
- ☐ Other: _____

## 2-B Draw Plot Plan (if one is not attached)

May use the back of this form
Include a North Arrow

☐ Plot plan is attached (Skip to 3-A).

# Section 2 – Plot Plan – Page 2

**Project Name:** _____

**2-C** **Draw Plot Plan** (if one is not attached) Include a North Arrow

# Dust Control Plan
# Section 3 – Fugitive PM10 Sources – Page 1

**Project Name:** _____

## 3-A Disturbed Surface Area

Report the total area of land surface to be disturbed, the daily throughput volume of earthmoving in cubic yards, and the total area in acres of the entire project site. (Rule 8021 Sec. 6.3.6.3)

Total area of land surface to be disturbed: _____ Acres

Daily maximum throughput volume of earthmoving: _____ Cubic Yards

Daily average throughput volume of earthmoving: _____ Cubic Yards

Total area of entire project site: _____ Acres

Total disturbed areas that will be left inactive for more than seven days: _____ Acres

## 3-B Dust Generating Activity Dates

The expected start and completion dates of **dust generating activities and soil disturbance activities** to be performed on site. For phased projects, it may be necessary to report expected start and completion dates separately. (Rule 8021 Sec. 6.3.6.4)

**Expected start date**: _____ **Completion Date**: _____

Phase Project Start – A: _____ Completion – A: _____

Phase Project Start – B: _____ Completion – B: _____

Phase Project Start – C: _____ Completion – C: _____

## 3-C Other Locations

Identify whether any other locations should be included with this plan that are involved with this project. An example may include listing any site where materials will be imported from or exported to. (Rule 8021 Sec. 6.3.2)

☐ No other locations are included with this project. (Skip to 3-D)

**Location 1:** _____

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

**Location 2:** _____

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

**Location 3:** _____

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

# Section 3 – Fugitive PM10 Sources – Page 2

**Project Name:** _____

## 3-D Sources of Fugitive Dust

This section describes the minimum requirements for limiting visible dust emissions from activities that cause fugitive dust emissions. (Rule 8021 Sec. 6.3.6.5) **Check at least one box under each category**.

**Structural Demolition.** (Rule 8021 Sec. 5.1, 6.3.3, & 6.3.6.5)

- ☐ No demolitions are planned for this project.
- ☐ Asbestos NESHAP notification and fees have been submitted to the District. (Rule 3050 and Rule 4002).
- ☐ Water will be applied to the following areas for the duration of the demolition activities:
  - Building exterior surfaces;
  - Unpaved surface areas where equipment will operate;
  - Razed building materials; and
  - Water or dust suppressants will be applied to unpaved surface areas within 100 feet of structure during demolition.

**Pre-Activity.** (Rule 8021 Sec. 5.2)

- ☐ Not applicable for this project (Please explain why in Section 3-F).
- ☐ The site will be pre-watered and work will be phased to reduce the amount of disturbed surface area at any one time (Complete Section 4-A).

**Active Operations.** (Rule 8021 Sec. 5.2)

- ☐ Water will be applied to dry areas during leveling, grading, trenching, and earthmoving activities (Complete Section 4-A).
- ☐ Wind barriers will be constructed and maintained, and water or dust suppressants will be applied to the disturbed surface areas (Complete Sections 4-A or 4-B, and 4-C).

**Inactive Operations, including after work hours, weekends, and holidays.** (Rule 8021 Sec. 5.2)

- ☐ Not applicable for this project (Please explain why in Section 3-F).
- ☐ Water or dust suppressants will be applied on disturbed surface areas to form a visible crust, and vehicle access will be restricted to maintain the visible crust. (Complete Section 4-A or 4-B, and 4-C)

**Temporary stabilization of areas that remain unused for seven or more days.** (Rule 8021 Sec. 5.2)

- ☐ Not applicable for this project (Please explain why in Section 3-F)
- ☐ Vehicular access will be restricted and water or dust suppressants will be applied and maintained at all un-vegetated areas (Complete Section 4-A or 4-B, and 4-C).
- ☐ Vegetation will be established on all previously disturbed areas (Complete Section 4-C).
- ☐ Gravel will be applied and maintained at all previously disturbed areas (Complete Section 4-C).
- ☐ Previously disturbed areas will be paved (Complete Section 4-C).

**Unpaved Access and Haul Roads, Traffic and Equipment Storage Areas.** (Rule 8021 Sec. 5.2 and 5.3)

- ☐ Not applicable for this project (Please explain why in Section 3-F)
- ☐ Apply water or dust suppressants to unpaved haul and access roads (Complete Section 4-A or 4-B)
- ☐ Post speed limit signs of not more than 15 miles per hour at each entrance, and again every 500 feet. (Complete Section 4-C)
- ☐ Water or dust suppressants will be applied to vehicle traffic and equipment storage areas (Complete Section 4-A or 4-B).

**Wind Events.** (Rule 8021 Sec. 5.4)

- ☐
  - Water application equipment will apply water to control fugitive dust during wind events, unless unsafe to do so.
  - Outdoor construction activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.

# Section 3 – Fugitive PM10 Sources – Page 3

## 3-E Bulk Materials (Rule 8021 Sec. 6.3.6.6 and Rule 8031)

**Outdoor Handling of Bulk Materials.** (Rule 8031 Sec. 5.0 A)

- ☐ No bulk materials will be handled during this project.
- ☐ Water or dust suppressants will be applied when handling bulk materials.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained, and water or dust suppressants will be applied.

**Outdoor Storage of Bulk Materials.** (Rule 8031 Sec. 5.0 B)

- ☐ No bulk materials will be stored during this project.
- ☐ Water or dust suppressants will be applied to storage piles.
- ☐ Storage piles will be covered with tarps, plastic, or other suitable material and anchored in such a manner that prevents the cover from being removed by wind action.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained around the storage piles, and water or dust suppressants will be applied.
- ☐ A three-sided structure (< 50% porosity) will be used that is at least as high as the storage piles.

**On-Site Transporting of Bulk Materials**. (Rule 8031 Sec. 5.0 C)

- ☐ No bulk materials will be transported on the project site.
- ☐ Vehicle speed will be limited on the work site.
- ☐ All haul trucks will be loaded such that the freeboard is not less than six inches when transported across any paved public access road.
- ☐ A sufficient amount of water will be applied to the top of the load to limit visible dust emissions.
- ☐ Haul trucks will be covered with a tarp or other suitable cover.

**Off-Site Transporting of Bulk Materials.** (Rule 8031 Sec. 5.0 D)

- ☐ No bulk materials will be transported to or from the project site.
- ☐ The following practices will be performed: (complete Section 5-B)
  - The interior of emptied truck cargo compartments will be cleaned or covered before leaving the site.
  - Spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates will be prevented.
  - Haul trucks will be covered with a tarp or other suitable cover or will be loaded such that the freeboard is not less than six inches when transported on any paved public access road to or from the project site and a sufficient amount of water will be applied to the top of the load to limit visible dust emissions.

**Outdoor Transport using a Chute or Conveyor.** (Rule 8031 Sec. 5.0 E)

- ☐ No chutes or conveyors will be used.
- ☐ Chute or conveyor will be fully enclosed.
- ☐ Water spray equipment will be used to sufficiently wet the materials.
- ☐ Transported materials will be washed or screened to remove fines (PM10 or smaller).

## 3-F Comments

# Dust Control Plan
# Section 4 – Dust Control Methods – Page 1

**Project Name:** _____

## 4-A Water Application

Complete this section if water application will be used as a control method for limiting visible dust emissions and stabilizing surface areas. Check and answer everything that applies to this project.
(Rule 8021 Sec. 6.3.6.6)

**Water Application Equipment:**

☐ Sprinklers: Describe the activities that will utilize sprinklers:

_____

Minimum treated area: _____ ☐ Square Feet ☐ Acres

Maximum treated area: _____ ☐ Square Feet ☐ Acres

Minimum water flow rate: Duration: _____

☐ Water Truck, ☐ Water Trailer, ☐ Water Wagon, ☐ Other: _____

Describe the activities that will utilize this equipment:

_____

Number of application equipment available: _____

Application equipment capacity: _____

Application frequency: _____

Application rate: _____ Gallons per acre per application

Hours of operation: _____

Water application equipment is available to operate after normal working hours, on weekends, and holidays.

After-hours contact: _____ Phone No.: _____

After-hours contact: _____ Phone No.: _____

**Water Supply:** Include the relative locations of these sources on the plot plan in Section 2.

☐ Fire hydrants

Number of hydrants available On-Site: _____ Off-Site: _____

Approval granted by the owner or public agency to use their fire hydrants for this project.

Owner or Agency: _____

Contact: _____ Phone No.: _____

☐ Storage tanks Number and capacity: _____

☐ Wells Number and flow rate: _____

☐ Canal, River, Pond, Lake, etc. Describe: _____

Approval granted by the owner or public agency to use their water source for this project.

Owner or Agency: _____

Contact: _____ Phone No.: _____

☐ Other: _____

# Section 4 – Dust Control Methods – Page 2

**Project Name:** _____

## 4-B Dust Suppressant Products

**Complete this section if a dust suppressant product will be used**. These materials include, but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions, and bituminous materials (road oils). (Rule 8021 Sec. 6.3.6.6)

**Copy this page if more than one dust suppressant product will be used.**

☐ **Not Applicable.** Only water application will be the control method used. **Skip to 4-C.**

Application Area: _____

Product Name: _____

Contractor's Name: _____ Phone No: _____

Application Rate: _____ Gallons of undiluted material per ☐ mile or ☐ acre treated.

Application Frequency: _____ Applications per ☐ week, ☐ month, ☐ year

Application Equipment: _____

Number of Application Equipment Available: _____

Application Equipment Capacity: _____

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

- ☐ Product Specifications (MSDS, Product Safety Data Sheet, etc.)
- ☐ Manufacturer's Usage Instructions (method, frequency, and intensity of application)
- ☐ Environmental impacts and approvals or certifications related to the appropriate and safe use for ground application.

# Section 4 – Dust Control Methods – Page 3

**Project Name:** _____

## 4-C Other Dust Control Methods

Check below the other types of dust control methods that will be employed at the construction site. (Rule 8021 Sec. 5.2)

☐ Physical barriers for restricting unauthorized vehicle access:
- ☐ Fences ☐ Gates ☐ Posts ☐ Berms ☐ Concrete Barriers
- ☐ Other: _____

☐ Wind barriers Describe: _____

☐ Posted speed limit signs meet State and Federal Department of Transportation standards. (Rule 8021 Sec. 5.3)
- ☐ Posted at 15 miles per hour, ☐ Posted at _____ miles per hour (less than 15 MPH)

☐ Re-establish vegetation for temporarily stabilizing previously disturbed surfaces.
- Explain: _____

☐ Apply and maintain gravel:
- ☐ On haul roads ☐ On access roads ☐ At equipment storage yards
- ☐ At vehicle traffic areas ☐ For temporarily stabilizing previously disturbed areas.
- Explain: _____

☐ Apply pavement:
- Explain: _____

☐ Other: _____

## 4-D Contingencies

Contingencies to be implemented if application equipment becomes inoperable, more equipment is needed to effectively control fugitive dust emissions during active and inactive periods, accessibility limitations occur at the water sources, or staff is not available to operate the application equipment. Describe the contingencies that will be in place and when they will be implemented. Attach any additional information if needed. (Rule 4102 and Rule 8021 Sec. 6.3.6.6)

_____

_____

_____

_____

_____

## 4-E Record keeping (Rule 8011 Sec. 6.2)

**Records and any other supporting documents for demonstrating compliance must be maintained, but only for those days when a control measure is implemented.** The District has developed record keeping forms that may be used for complying with this requirement. Check one or both below:

☐ Records will be maintained using the forms developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

# Dust Control Plan
# Section 5 – Carryout and Trackout – Page 1

**Project Name:** _____

## 5-A Treatments for Preventing Trackout

Select the control devices that will be used for preventing trackout from occurring onto paved public roads. Trackout is any material that adheres to vehicle tires and is deposited onto a paved public road or the paved shoulder of a paved public road. Check one or a combination that will apply to this project.

☐ **Grizzly:** Rails, pipes, or grates used to dislodge debris off of vehicles before exiting the site. Extends from the intersection with the paved public road surface for the full width of the unpaved exit surface for a distance of at least 25 feet. (Rule 8041 Sec. 5.9.1)

Describe: _____

☐ **Gravel Pad:** A layer of washed gravel at least one (1) inch or larger in diameter, three (3) inches deep, and extends from the intersection with the public paved road surface for the full width of the unpaved exit surface for a distance of at least 50 feet. (Rule 8041 Sec. 5.9.2)

Gravel Size: _____ Inches

Pad Width: _____ Feet Length: _____ Feet Depth: _____ Inches

☐ **Paved Surface:** Extends from the intersection with the paved public road surface for the full width of the unpaved access road for at least 100 feet to allow mud and dirt to drop off of vehicles before exiting the site. (Rule 8041 Sec. 5.9.3)

Width: _____ Feet Length: _____ Feet

Mud and dirt deposits accumulating on paved interior roads will be removed with sufficient frequency, but not less frequently than once per workday. Cleanup will commence within ½ hour of generating any carryout and trackout. (Rule 8041 Sec. 5.8.2 and 5.9.3)

Clean-up Frequency: _____

☐ **Wheel Washer:** Uses water to dislodge debris from tires and vehicle undercarriage. (Rule 8011 Sec. 3.73)

Describe: _____

☐ **Other:** (Rule 8041 Sec. 5.8.1.2) _____

## 5-B Treatments for Preventing Carryout

Report the required treatments that will be used for preventing carryout from occurring on paved public roads. Carryout occurs when materials from emptied or loaded haul trucks, vehicles, or trailers falls onto a paved public road or paved shoulder of a paved public road.

☐ No haul trucks will be routinely entering or leaving the project site.

**Emptied Haul Trucks:** (Rule 8031 Sec 5.0)

☐ Interior cargo compartments will be cleaned before leaving the project site.

☐ Cargo compartment will be covered with a tarp or suitable cover before leaving the project site.

**Loaded Haul Trucks:** Spillage or loss of materials from holes or other opening in the cargo compartment will be prevented when material is transported onto any paved public access road. (Rule 8031 Sec 5.0)

**Select one or both of the required applications**:

☐ Haul trucks will be loaded such that the freeboard is not less than six inches with water applied to the top of the load before leaving the project site.

☐ Cargo compartment and load will be covered with a tarp or suitable cover before leaving the project site.

☐ **Other:** _____

# Section 5 – Carryout and Trackout – Page 2

**Project Name:** _____

## 5-C Cleaning up Carryout and Trackout

Check and report below the methods and frequency for cleaning up carryout and trackout from the surface and paved shoulders of paved public roads.

**The use of blower devices, or dry rotary brushers or brooms, for removal of carryout and trackout from paved public roads is prohibited.** (Rule 8041 Sec. 5.0).

In the event the control device becomes ineffective due to an accumulation of mud and dirt, material must be removed within ½ hour of the generation of carryout and trackout. (Rule 8041 Sec. 5.8.2.)

**The project is located in:**

☐ An **Urban Area,** within an incorporated city boundary or an unincorporated area surrounded by a city.

Minimum cleanup frequency will be at the end of the workday and removed immediately if carryout and trackout extends beyond 50 feet. (Rule 8041 Sec. 5.4)

☐ A **Rural Area,** located within an unincorporated area and not surrounded by an incorporated city.

- ☐ The construction project is less than 10 acres in size: minimum cleanup frequency is at the end of the workday. (Rule 8041 Sec. 5.1)
- ☐ Construction projects 10 or more acres in size: minimum cleanup frequency is end of the workday and immediately if carryout and trackout extends beyond 50 feet. (Rule 8041 Sec. 5.5)

**Clean up Method:** Check the method below that will be used for cleaning carryout and trackout.

☐ Manually sweeping and picking up. (Rule 8041 Sec. 5.7.1)

☐ Mechanical sweeping with a rotary brush or broom accompanied or preceded by water. (Rule 8041 Sec. 5.7.2)

Describe the types of equipment that will used:

_____

☐ Operating a PM10-efficient street sweeper. (Rule 8041 Sec. 5.7.3)

Make and Model: _____

☐ Flushing with water: allowed if: (Rule 8041 Sec. 5.7.4)

- No curbs or gutters are present.
- Using water will not result as a source of trackout and carryout.
- Using water will not result in adverse impacts on storm water drainage systems.
- Using water will not violate any National Pollutant Discharge Elimination System permit program.

## 5-D Record keeping for Cleanup of Carryout and Trackout (Rule 8011 Sec. 6.2)

**Records and any other supporting documents for demonstrating compliance must be maintained.** The District has developed a record keeping form specific for cleaning carryout and trackout from paved public roads and may be used for complying with this requirement. Check one or both below:

☐ Records will be maintained using the form developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

# Dust Control Plan
# Section 6 – Certification

**Project Name:** _____

## 6-A Certification

I certify that all information contained herein and information submitted in the attachments to this documents are true and correct.

| | |
|---|---|
| Print Name | Title |
| Signature | Date |

| | | |
|---|---|---|
| Phone Number | Fax Number | Cell Number |

Appendix C

# Wetland Delineation Report

# Manning Avenue Bridge Replacement Project

## Wetland Delineation Report

## Manning Avenue, City of Reedley, Fresno County, California

Bridge No. 42C-0010

06-FRE-CR
BHLS-5216 (028)

**October 2008**

Caltrans

# Wetland Delineation Report

# Manning Avenue Bridge Replacement Project

Manning Avenue, City of Reedley, Fresno County, California

06-FRE-CR
BHLS 5216 (028)

## October 2008

STATE OF CALIFORNIA
Department of Transportation

CITY OF REEDLEY


Approved By: Kelly Hobbs
Branch Chief
Southern San Joaquin Valley Environmental Management Branch
2015 East Shields Avenue, Suite # 100
Fresno, CA 93726
(559) 243-8222

Approved By: Dana Ritschel
Project Manager
City of Reedley
Department of Public Works
1733 9th Street
Reedley, CA 9 3654
(559) 637-4200

# Executive Summary

The City of Reedley, in cooperation with the California Department of Transportation, proposes to realign Manning Avenue and replace the existing Kings River Bridge on Manning Avenue. The existing bridge would be replaced by a three-span parabolic haunched, cast in place concrete box girder.

This report presents the results of a delineation of wetlands and other waters of the United States conducted at the Manning Avenue Bridge Replacement Project Site, located in the City of Reedley, Fresno County, California. Fieldwork for the delineation was conducted on May 10, 2007. The wetland delineation was performed in accordance with the 1987 U.S. Army Corps of Engineers (ACOE) Wetland Delineation Manual (Wetland Training Institute 1995) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Environmental Laboratory 2006). The delineation was conducted to assist the City of Reedley in identifying the type and extent of waters subject to ACOE regulation under Section 404 of the federal Clean Water Act.

## S.1 Results

One wetland and one other water body, with a combined area of 3.936 acres, were identified within the boundaries of the delineation area (Exhibit A). Both features were interpreted to be waters of the United States that are subject to ACOE regulation under Section 404 of the Clean Water Act. All jurisdictional boundaries and determinations presented in this report are preliminary and are subject to verification by the ACOE, Sacramento District.

Caltrans and the City of Reedley are requesting that the ACOE verify the presence of 3.936 acres of jurisdictional wetlands and 'other' waters of the United States.

# Table of Contents


**Page**

Table of Contents ..... i
List of Tables and Figures ..... ii
List of Abbreviated Terms ..... iii

**Executive Summary** ..... S-1
S.1 Results ..... S-1
**Section 1** Introduction ..... 1-1
1.1 Description of Project ..... 1-1
1.2 Project Setting ..... 1-1
1.2.1 Precipitation and Growing Season ..... 1-2
1.2.2 Geology and Soils ..... 1-2
1.2.3 Hydrology ..... 1-3
1.2.4 Vegetation ..... 1-3
**Section 2** Delineation Methods ..... 2-1
2.1 Evaluation of Mandatory ACOE Criteria for Wetlands ..... 2-1
2.1.1 Vegetation ..... 2-1
2.1.2 Hydrology ..... 2-1
2.1.3 Soils ..... 2-2
2.2 Field Delineation Methods for Other Waters of the United States ..... 2-2
**Section 3** Results ..... 3-1
3.1 Wetlands ..... 3-1
3.1.1 Vegetation ..... 3-1
3.1.2 Hydrology ..... 3-2
3.1.3 Soils ..... 3-2
3.1.4 Preliminary Boundary and Jurisdictional Status Determinations ..... 3-2
3.2 Other Waters of the United States ..... 3-2
**Section 4** References Cited ..... 4-1
4.1 Printed References ..... 4-1

**Exhibit A** Preliminary Delineation of Wetlands and Other Waters of the United States (Sheets 1, 2, and 3)

**Appendix A** Plant Species Observed in the Delineation Area
**Appendix B** Representative Photographs
**Appendix C** Wetland Data Forms
**Appendix D** Preliminary Jurisdictional Determination Forms

# List of Tables and Figures


| | | On Page |
|---|---|---|
| Table 1-1 | Parcel Owner and Project Applicant Contact Information | 1-2 |
| Table 1-2 | Soil Map Units That Occur Within the Delineation Area | 1-3 |
| Table 3-1 | Wetlands and Other Waters of the United States in the Delineation Area | 3-1 |

| | | Follows Page |
|---|---|---|
| Figure 1-1 | Project Location and Vicinity | 1-2 |
| Figure 1-2 | Project Vicinity (Aerial Photograph) | 1-2 |
| Figure 1-3 | Precipitation and Growing Season Data | 1-4 |
| Figure 1-4 | Soil Survey Map | 1-4 |

# List of Abbreviated Terms

| | |
|---|---|
| ACOE | U.S. Army Corps of Engineers |
| Arid West Supplement | Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region |
| delineation | delineation of wetlands and other waters of the United States |
| Delineation Area | Manning Avenue Bridge Replacement Delineation Area and Project Site |
| GPS | global positioning system |
| OHWM | ordinary high-water mark |
| proposed project | Manning Avenue Bridge Replacement Project |
| Section 404 CWA | Section 404 of the federal Clean Water Act |
| SR | State Route |
| CIDH | cast-in-drilled-hole |
| CISS | cast-in-steel-shell |

# Section 1 Introduction

This report presents the results of a delineation of wetlands and other waters of the United States (delineation) conducted at the Manning Avenue Bridge Replacement Project Site (Delineation Area), located in the City of Reedley, Fresno County, California (Figures 1-1 and 1-2). Fieldwork for the delineation was conducted by Scott Frazier, certified professional soil scientist, and Lisa Webber, botanist/wetland ecologist, on May 10, 2007. The delineation was conducted to assist the City of Reedley (project applicant) in identifying the type and extent of waters subject to U.S. Army Corps of Engineers (ACOE) regulation under Section 404 of the federal Clean Water Act (Section 404 CWA). The wetland determination and delineation was performed according to the 1987 ACOE Wetland Delineation Manual (Wetland Training Institute 1995) and the Interim Regional Supplement to the ACOE Wetland Delineation Manual: Arid West Region (Environmental Laboratory 2006).

This report was prepared in accordance with the ACOE Sacramento District "Minimum standards for acceptance of preliminary wetlands delineations" (ACOE 2001). All jurisdictional boundaries and determinations presented in this report are preliminary and are subject to verification by the ACOE Sacramento District.

## 1.1 Description of Project

The City of Reedley, in cooperation with the California Department of Transportation, proposes to realign Manning Avenue and replace the existing Kings River Bridge on Manning Avenue. The new bridge structure would be a three-span parabolic haunched, cast-in-place, pre-stressed concrete box girder. Supports would likely be large-diameter cast-in-drilled-hole (CIDH) or cast-in-steel-shell (CISS) concrete piles at the piers, with pile footings at the abutments. All 10 original concrete pierwall foundations would be removed and replaced with two pier locations within the Kings River channel.

## 1.2 Project Setting

The approximately 25-acre Delineation Area is the project construction area, including the bridge span, approaches, and staging areas, and a variable-size buffer around the project construction area. The Delineation Area is located in the City of Reedley, Fresno County, California (Figure 1-1). The Delineation Area appears on the Reedley 7.5-minute series U.S. Geological Survey quadrangle, in the SW ¼ of Section 21, Township 15S, Range 23E, Mount Diablo Base and Meridian (Figure 1-1). The latitude and longitude for the approximate center of the Delineation Area are 36° 36' 14" N and 119° 27' 59" W, respectively (Datum: WGS84).

The Delineation Area consists of a small segment of the Kings River channel, the Manning Avenue Bridge and adjoining road segments, and portions of the surrounding farmland, campgrounds, roadside areas, parking lots, and undeveloped river terraces that could be directly or indirectly affected during construction of the proposed project (Figure 1-2). Elevations in the Delineation Area range from about 290 to 315 feet above mean sea level, and slope gradients

range from level to moderately steep. Contact information for the project applicant and for property owners located within the Delineation Area is provided in Table 1-1.

To reach the Delineation Area from Sacramento, one would drive south on State Route 99 (SR 99) for approximately 178 miles, and exit east onto Manning Avenue (Exit 121). The Delineation Area is located approximately 11 miles east of SR 99 where Manning Avenue crosses the Kings River.

**Table 1-1. Parcel Owner and Project Applicant Contact Information[1]**

Project Applicant: City of Reedley, 1733 Ninth Street, Reedley, CA 93654
Contact: Rocky D. Rogers, Public Works Director

| Fresno County APN | Owner | Street Address | City, State, and Zip Code |
|---|---|---|---|
| 363-330-8ST | County of Fresno | 2220 Tulare Street | Fresno, CA 93721 |
| 363-060-24T | County of Fresno | 2220 Tulare Street | Fresno, CA 93721 |
| 363-330-7ST | County of Fresno Railroad | None given | – |
| 368-360-23S | County of Fresno Railroad | None given | – |
| 365-072-19T | County of Fresno | 2220 Tulare Street | Fresno, CA 93721 |
| 365-072-16T | County of Fresno | 2220 Tulare Street | Fresno, CA 93721 |
| 365-072-21P | City of Reedley | 1733 Ninth Street | Reedley, CA 93654 |
| 365-072-17 | Michael Kelley | P.O. Box 285 | Reedley, CA 93654 |
| 368-360-21S | Lic Barmart | 1233 Fiesta Avenue | Calexico, CA 92231 |
| 368-360-13 | Otani Hideki | P.O. Box 790 | Reedley, CA 93654 |
| 368-360-35 | Otani Properties | 1960 13th Street | Reedley, CA 93654 |
| 368-360-24S | Lic Barmart | 1233 Fiesta Avenue | Calexico, CA 92231 |

### 1.2.1 Precipitation and Growing Season

The closest National Weather Service cooperative weather station (Fresno WSO AP) is located approximately 11 miles northwest of the Delineation Area at an elevation of 340 feet (Figure 1-1). Data from this weather station is presented here as a reasonable approximation of precipitation trends and growing season duration in the Delineation Area.

In most years the growing season at the Fresno WSO AP weather station is 365 days. Mean annual precipitation is 11.0 inches, with most falling as rain between November and April. Despite several months of below-average rainfall, annual precipitation was within the normal range during the 2006/2007 rainfall year (Figure 1-3). (U.S. Department of Agriculture, Natural Resources Conservation Service 2007; Western Regional Climate Center 2007).

### 1.2.2 Geology and Soils

The geologic map compiled by Matthews and Burnett (1991) indicates that the Delineation Area is underlain by Quaternary alluvial fan deposits. Overlying soils are mapped primarily as Grangeville fine sandy loam, Hanford fine sandy loam, Pollasky sandy loam and fine sandy

[1] Relevant parcel boundaries are shown on the wetland delineation map exhibits in Appendices A through D.


06540.06 001 Wet Delin (8-07)

**Figure 1-1**
**Project Location and Vicinity**


06540.06.001 Wet Delin (8-07)

**Figure 1-2**
**Project Vicinity (Aerial Photograph)**

loam, and Tujunga loamy sand (Figure 1-4). The Grangeville, Hanford, and Tujunga soils typically consist of very deep, well drained to somewhat poorly drained, coarse-textured soils derived from recent, unconsolidated alluvium. The Pollasky soils are also well drained and coarse-textured, but are derived from older, moderately consolidated alluvium that typically occurs at a depth of about 40 inches from the soil surface (Table 1-2). Several of the soil map units that occur adjacent to the Kings River channel are known to contain hydric soil components and inclusions on floodplains and in drainageways (Table 1-2).

**Table 1-2. Soil Map Units That Occur Within the Delineation Area**

| Soil Map Unit Symbol | Soil Map Unit Name | Dominant Soil Textures | Water Restrictive Layers | Depth to Restrictive Layer (inches) | Drainage Class | Hydric Soil Units or Inclusions |
|---|---|---|---|---|---|---|
| Gf | Grangeville fine sandy loam | Fine sandy loams and sandy loams | None | – | Well to somewhat poorly drained | Yes—floodplains |
| Gp | Grangeville soils, channeled | Fine sandy loams and sandy loams | None | – | Well to somewhat poorly drained | Yes—floodplains, drainageways |
| Hm | Hanford fine sandy loam | Fine sandy loams and sandy loams | None | – | Well drained | Yes—drainageways |
| PmC | Pollasky sandy loam, 9 to 15% slopes | Sandy loams | Moderately consolidated alluvium | 40 | Well drained | No |
| PnC | Pollasky fine sandy loam, 9 to 15% slopes | Sandy loams | Moderately consolidated alluvium | 40 | Well drained | No |
| TzbA | Tujunga loamy sand, 0 to 3% slopes | Loamy sands | None | – | Excessively drained | Yes—floodplains |
| W | Water | – | – | – | – | – |

*Sources:* Huntington 1971; U.S. Department of Agriculture Soil Conservation Service 1992.

### 1.2.3 Hydrology

The Delineation Area drains directly to the Kings River. The river flows in a southwesterly direction through the San Joaquin Valley and is partitioned into the Kings River Canal, Blakeley Canal, and Tulare Lake Canal about 31 miles southwest of the Delineation Area near the town of Stratford.

### 1.2.4 Vegetation

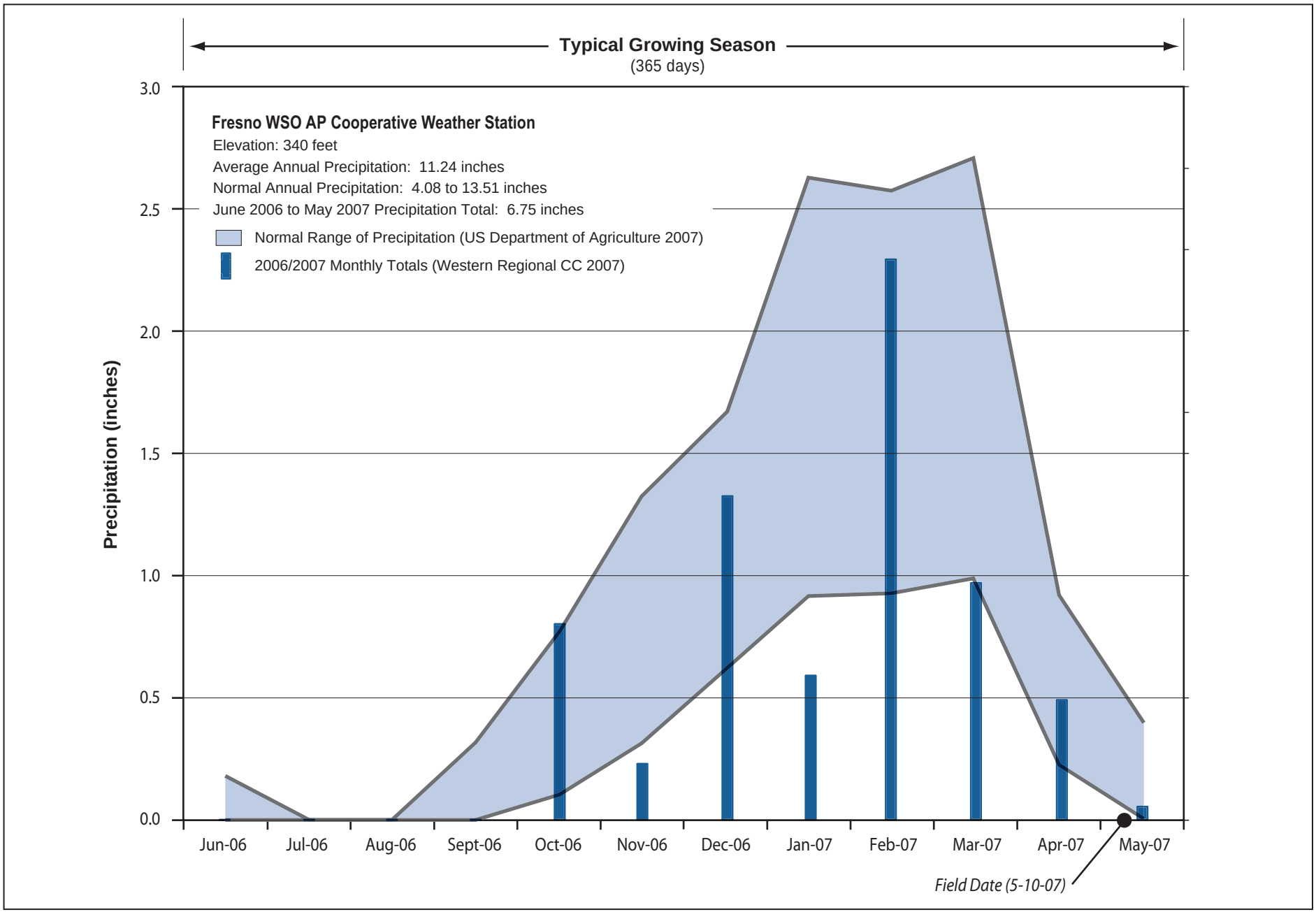
Six vegetation community types were identified in the Delineation Area: valley oak riparian forest, black willow riparian forest, nonnative annual grassland, agricultural land, landscaped areas, and riverine wetland. The first five communities listed are upland (i.e., nonjurisdictional) communities and are described below. The riverine wetland community is potentially jurisdictional and is described in Section 3 (Results) of this report. The common and scientific names of all plant species observed in the Delineation Area are provided in Appendix A, along with the wetland indicator status of each species listed.

The valley oak riparian forest is a multi-layered community type that includes an overstory of mature trees, a subcanopy of young trees and shrubs, and an understory of herbaceous vegetation. It occurs along both banks of the Kings River (Figure 1-2). Species observed in the valley oak riparian forest community include valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), California black walnut (*Juglans californica*), black willow (*Salix goodingii*), narrow-leaved willow (*Salix goodingii*), Fremont's cottonwood (*Populus fremontii*), California grape (*Vitis californica*), Mexican elderberry (*Sambucus mexicana*), reed canarygrass (*Phalaris arundinacea*), mugwort (*Artemisia douglasiana*), and Santa Barbara sedge (*Carex barbarae*).

The black willow riparian forest community occupies the two medial sand bars located in the middle of the Delineation Area (Figure 1-2). Species observed in this community include black willow, narrow-leaved willow, horsetail (*Equisetum* sp.), cocklebur (*Xanthium strumarium*), reed canarygrass, and common monkeyflower (*Mimulus guttatus*).

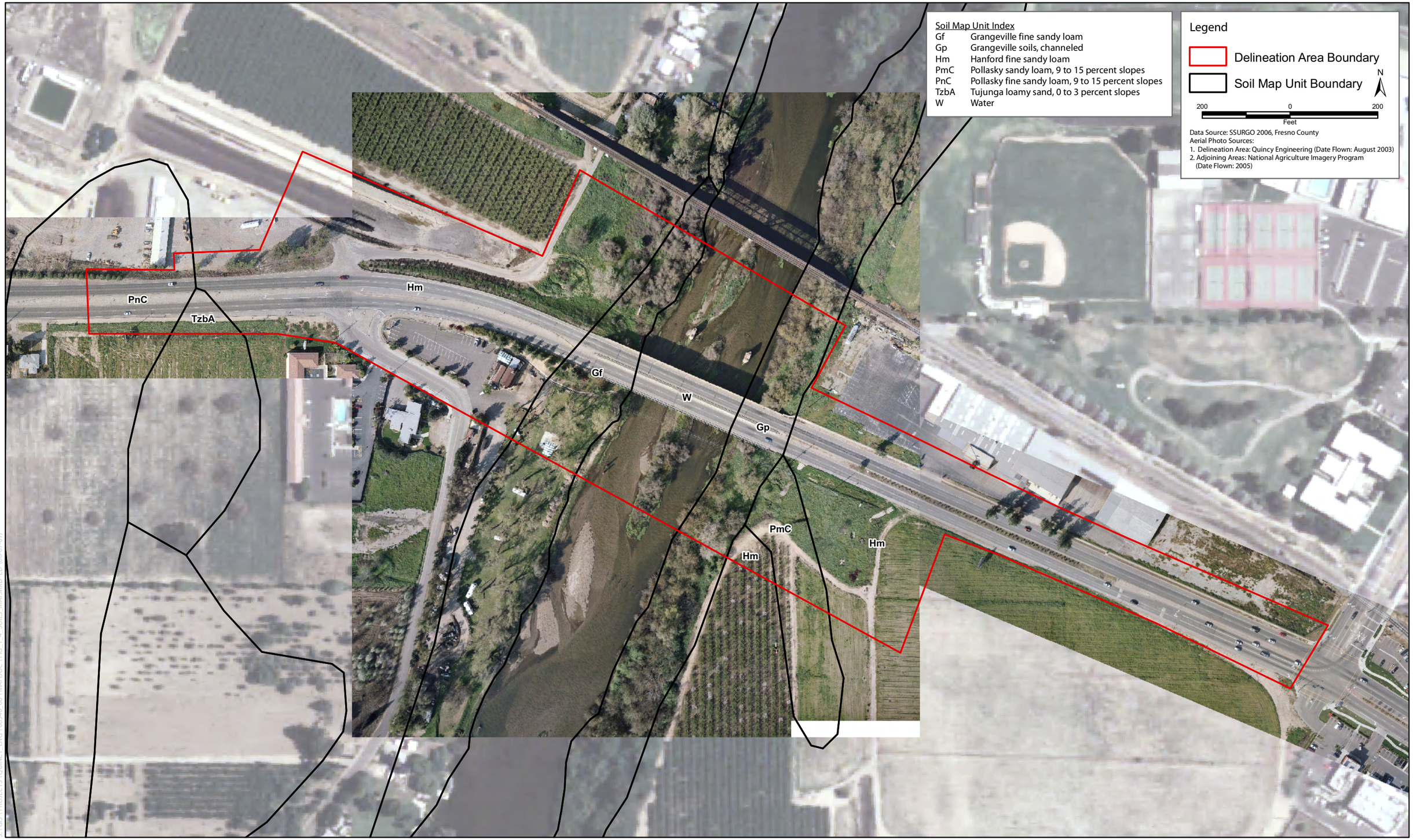
Nonnative annual grassland is a common community that consists of annual grasses and a variety of native and nonnative annual forbs. It occurs within areas upslope of the riparian forest communities and in areas along the edge of Manning Avenue (Figure 1-2). Dominant grass species within these areas include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Lolium multiflorum*). Other characteristic species include redstem filaree (*Erodium cicutarium*), hirschfeldia (*Hirschfeldia incana*), wild radish (*Raphanus sativa*), Russian thistle (*Salsola tragus*), and old man of spring (*Senecio vulgaris*).

Row and orchard crops comprise a small portion of the Delineation Area on the eastern side of the Kings River (Figure 1-2). The landscaped plant communities associated with the camping resort located in the southwestern corner of the Delineation Area are dominated by turf grass and ornamental tree species including pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), and pine (*Pinus* sp.).




06540.06 001 Wet Delin (8-07)

**Figure 1-3**
**Precipitation and Growing Season Data**




S:\GIS\PROJECTS\QUINCY_ENG\06540_06\MAPDOC\FIG_1_4_SOILS_MAPMXD_LD (08-07-07)

**Figure 1-4**
**Soil Survey Map**

# Section 2 Delineation Methods

Fieldwork for the wetland determination and delineation was conducted by Scott Frazier, a certified professional soil scientist and Lisa Webber, a botanist/wetland ecologist, on May 10, 2007.

## 2.1 Evaluation of Mandatory ACOE Criteria for Wetlands

Wetlands were identified and delineated using the routine on-site determination method described in the *U.S. Army Corps of Engineers wetlands delineation manual* (Environmental Laboratory 1987) and the supplemental procedures and wetland indicators provided in the *Interim regional supplement to the Corps of Engineers wetland delineation manual for the arid west region* (Arid West Supplement) (Environmental Laboratory 2006). Wetland identification is based on the three-parameters required of wetlands—hydrophytic vegetation, hydric soils, and wetland hydrology. Methods used for determination of each parameter are described below.

### 2.1.1 Vegetation

The presence of hydrophytic vegetation was determined using the method outlined in the Arid West Supplement. Under this method, the basic hydrophytic vegetation indicator requires that more than 50% of the dominant plant species (defined as plants that comprise 20% or more of the absolute cover value observed at a sampling point) are FAC, FACW, or OBL species (50/20 rule) (Reed 1988). If the vegetation at a sampling point fails the dominance test but has positive indicators for hydric soil and wetland hydrology, additional indicators for hydrophytic vegetation are examined, including the prevalence index and morphological adaptations.

A comprehensive list of all plants observed in the Delineation Area is provided in Appendix A, along with the scientific name and the wetland indicator status of each species listed. Scientific names follow *The Jepson Manual* (Hickman 1993), as updated by the Jepson Interchange, an online database maintained by the Jepson and University Herbaria (University of California 2007). The wetland indicator status of each species listed on the wetland determination data sheets was taken from Reed (1988).

### 2.1.2 Hydrology

The Arid West Supplement provides descriptions of primary and secondary wetland hydrology indicators that were used at each sample point to determine whether wetland hydrology was present. These indicators are designed to provide evidence of wetland hydrology during one-time observations of a site where hydrophytic vegetation and hydric soils occur. Primary wetland hydrology indicators observed at sample points in the study area include landscape position and surface topography indicative of wetland hydrology (e.g., position of the site below an upslope water source, location within a distinct wetland drainage pattern, and concave surface topography) and residual evidence of ponding or flooding (e.g., drift and sediment deposits).

### 2.1.3 Soils

Soil survey information and county hydric soil lists were reviewed for the study area (U.S. Soil Conservation Service 1992; Huntington 1971). At sample sites, soils were evaluated using the Munsell soil color chart, hand texturing, and an assessment of diagnostic soil features (e.g., oxidized root channels and the amount of organic matter in the soil profile). Hydric soils were identified by the presence of redoximorphic features and a matrix chroma of 2 or less more than 2 inches thick (depleted matrix). Sampled soil characteristics and the mapped soil units at the sample sites are identified on the data forms (Appendix B).

In general, the wetland-upland boundary of wetlands was determined based on the presence or inference of positive indicators of all three mandatory criteria. The wetland-upland boundary initially was determined based on observed hydrophytic vegetation and wetland hydrological conditions. Sample sites were evaluated on the Arid West data forms. Soils with hydrophytic vegetation were compared with those of an adjacent area with upland vegetation to evaluate the differences in soils and determine whether the wetland site supported hydric soil indicators.

## 2.2 Field Delineation Methods for Other Waters of the United States

The boundaries of non-wetland waters were delineated at the ordinary high-water mark (OHWM), which represents the lateral limit of ACOE jurisdiction over non-tidal, non-wetland waters in the absence of adjacent wetlands (33 CFR 328.4[c]). The OHWM was identified using the definitions and field indicators provided in 33 CFR 328.3(e) and 329.11(a)(1), and in recent guidance issued by the ACOE (ACOE 2005).

A resource-grade global positioning system (GPS) unit was used to record the location of jurisdictional boundaries, data points, and other pertinent features wherever possible. Where satellite reception or geometry was poor, aerial photograph and topographic map interpretation was used to supplement GPS data. The GPS data were downloaded and corrected using the nearest available base-station data, and combined with aerial photograph and topo-interpreted boundary data to generate a delineation map for the Delineation Area.

# Section 3 Results

One wetland and one other water, with a combined area of 3.936 acres, were identified within the boundaries of the Delineation Area (Exhibit A). Both features were interpreted to be waters of the United States [3 CFR 328.3(a)(1)] that are within the scope of ACOE jurisdiction under Section 404 CWA (Table 3-1). The physical characteristics of both waters, and the factors considered in determining the boundaries and preliminary jurisdictional status of each, are provided below.

**Table 3-1. Wetlands and Other Waters of the United States in the Delineation Area**

| Wetlands and Other Waters of the United States | Preliminary Jurisdictional Status (33 CFR 328.3)* | Area (acres) |
|---|---|---|
| **Wetlands** | | |
| Riverine Wetlands | | 0.059 |
| RW-1 | Category (a)(7) water: Adjacent Wetland | 0.059 |
| **Other Waters** | | |
| Perennial Drainages | | 3.877 |
| PD-1 (Kings River) | Category (a)(1) water: Traditional Navigable Water | 3.877 |
| Wetlands Subtotal | | 0.059 |
| Other Waters Subtotal | | 3.877 |
| **Total** | | **3.936** |

* The seven categories of waters of the United States subject to ACOE jurisdiction are defined in 33 CFR 328.3

## 3.1 Wetlands

The one wetland identified in the Delineation Area (RW-1) was classified as a riverine wetland based on its hydrogeomorphic characteristics. It is situated in a swale-like depression on an undeveloped stream terrace on the western side of the Kings River channel (Exhibit A). RW-1 is dominated by herbaceous hydrophytes (Appendix B, Photo B-1), and, based on its geomorphic position, appears to be sustained largely by shallow groundwater and occasional overbank flows from the Kings River. The swale-like depression that contains riverine wetland RW-1 extends north of the Delineation Area and may represent the remnant of an old secondary floodplain channel (Exhibit A). Areas of similar riverine wetland vegetation south of the bridge were mapped as part the Kings River, and are discussed below under other waters of the United States.

### 3.1.1 Vegetation

Riverine wetland RW-1 is dominated by Santa Barbara sedge and reed canary grass. Santa Barbara sedge is a facultative wetland plant and reed canary grass is an obligate wetland plant (Appendix A). Accordingly, riverine wetland RW-1 was determined to contain hydrophytic vegetation based on the dominance of facultative and obligate wetland plant species (Appendix C, Data Sheet 4).

### 3.1.2 Hydrology

Wetland hydrology was determined to be present in riverine wetland RW-1 based on the presence of sediment deposits, a prevalence of facultative wetland and obligate wetland plant species (i.e., positive FAC-neutral test), and topographic and geomorphic conditions that suggest the presence of shallow groundwater during the wet season when water levels in the Kings River are high (Appendix C, Data Sheet 4).

### 3.1.3 Soils

The soil observed in riverine wetland RW-1 consists of fine sandy loam and loam that was determined to be hydric based on the presence of a low chroma matrix and redoximorphic concentrations of iron located below a thick, dark surface horizon (Indicator F6: Redox Dark Surface) (Appendix C, Data Sheet 4).

### 3.1.4 Preliminary Boundary and Jurisdictional Status Determinations

Riverine wetland RW-1 contains hydrophytic vegetation and hydric soil, and exhibits positive indicators of wetland hydrology (Appendix C, Data Sheet 4). As such, it possesses all three diagnostic environmental characteristics necessary to qualify as a wetland (Environmental Laboratories 1987, 2006). Adjacent areas lack one or more of these diagnostic characteristics. (Appendix C, Data Sheet 3).

Although riverine wetland RW-1 does not appear to have a regular surface water connection to the Kings River (a traditional navigable water of the United States), it is located in close proximity (~100 feet) to the river and appears to intercept shallow groundwater and occasional overbank flows during the wet season. As such, riverine wetland RW-1 was interpreted to be a "Category (a)(7) water" (an adjacent wetland) subject to ACOE jurisdiction under Section 404 CWA (Table 3-1). A preliminary jurisdictional determination form has been completed for riverine wetland RW-1, a copy of which is included in Appendix D of this report.

## 3.2 Other Waters of the United States

The Kings River (PD-1) is the only non-wetland water located within the boundaries of the Delineation Area (Exhibit A). The ordinary high-water channel has an average width of approximately 290 feet and is largely unvegetated, but does support narrow riverine fringe wetlands on both banks and on the two large medial bars located near the center of the river channel. These vegetated areas were not mapped separately, because they occur within the OHWM of the river, are regularly inundated, and function as part of the river. They do not apparently function as abutting wetlands, because their locations are impermanent, and vegetation and possibly soil is likely to be scoured during annual high flows. Because river flows are controlled by the Pine Flat Dam located approximately 30 miles upstream of Reedley, field indicators of ordinary high water elevation in the Delineation Area were sparse. The ordinary high water elevation (i.e., the limit of ACOE jurisdiction) was identified based largely on water marks observed on existing bridge supports, evidence of regular scour and deposition, and vegetation patterns (Appendix B, Photos B-2, B-3, and B-4).

The Kings River has been used in the past for interstate commerce (rafting, fishing, other forms of recreation, irrigation, and power generation) and, as such, was interpreted to be a "Category (a)(1) water" (traditional navigable water) subject to ACOE jurisdiction under Section 404 CWA (Table 3-1).

# Section 4 References Cited

## 4.1 Printed References


Environmental Laboratory. 1987. U.S. Army Corps of Engineers wetlands delineation manual. (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experience Station.

Environmental Laboratory. 2006. Interim regional supplement to the corps of engineers wetland delineation manual for the arid west region. (ERDC/EL TR-06-16.) Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Hickman, J. C. 1993. The *Jepson Manual: Higher Plants of California*. Berkeley and Los Angeles, CA: University of California Press.

Huntington, G. 1971. Soil survey of the eastern Fresno area, California. Davis, CA: United States Department of Agriculture and the University of California Agricultural Experiment Station.

Matthews, R.A. and J.L. Burnett. 1991. Geologic map of California, Fresno sheet (1:250,000). Sacramento, CA: California Division of Mines and Geology.

Reed, P. B. 1988. National list of plant species that occur in wetlands: California (Region 0). (Biological Report 88 [26.10].) May. Washington, DC: U.S. Fish and Wildlife Service, Research and Development. Prepared for National Wetlands Inventory.

University of California. 2007. Jepson online interchange for California floristics. Available: <http://ucjeps.berkeley.edu/interchange.html>. Accessed: April 19, 2007. Last Updated: January 26, 2007.

U.S. Army Corps of Engineers, Sacramento District. 2001. Minimum standards for acceptance of preliminary wetlands delineations. Sacramento, CA. Available: <http://www.spk.usace.army.mil//organizations/cespk-co/regulatory/pdf/min_ standards.pdf>. Accessed: April 19, 2007.

U.S. Army Corps of Engineers. 2005. Ordinary high water mark identification. Regulatory Guidance Letter No. 05-05. Available: <http://www.usace.army.mil/cw/cecwo/ reg/rgls/rgl_05_05.pdf>. Accessed: July 23, 2007.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2007. WETS Table documentation for the Fresno WSO AP cooperative weather station (station 043257), California. Available: <ftp://ftp.wcc.nrcs.usda.gov/support/climate/wetlands/ca/06019.txt>. Accessed: April 18, 2007. Last Updated: August 29, 2002.

U.S. Department of Agriculture, Soil Conservation Service. 1992. Official list of hydric soil map units for Fresno County, California. Davis, CA.

Western Regional Climate Center. 2007. Average monthly total precipitation for the Fresno WSO AP weather station (station 043257), California. Available: <http://www.wrcc.dri.edu/summary/Climsmcca.html>. Accessed: April 18, 2007.

# Exhibit A

Preliminary Delineation of Wetlands and Other Waters of the United States


# EXHIBIT A
## SHEET 1

PRELIMINARY DELINEATION OF
WETLANDS AND OTHER WATERS
OF THE UNITED STATES

MANNING AVENUE BRIDGE REPLACEMENT PROJECT

FRESNO COUNTY, CALIFORNIA

AUGUST 6, 2007

| HABITAT | ACRES |
|---|---|
| **WETLANDS** | |
| Riverine Wetlands | 0.059 |
| RW-01 | 0.059 |
| **OTHER WATERS OF THE U.S.** | |
| Perennial Drainage (Kings River) | 3.877 |
| PD-01 | 3.877 |
| TOTAL ACREAGE | 3.936 |

LEGEND

- OHWM (Dashed where Inferred)
- Data Point
- Delineation Area Boundary
- Direction of Water Flow
- Photo Point

Scale 1"=100'

100 0 100

Contour Interval: 1 Foot

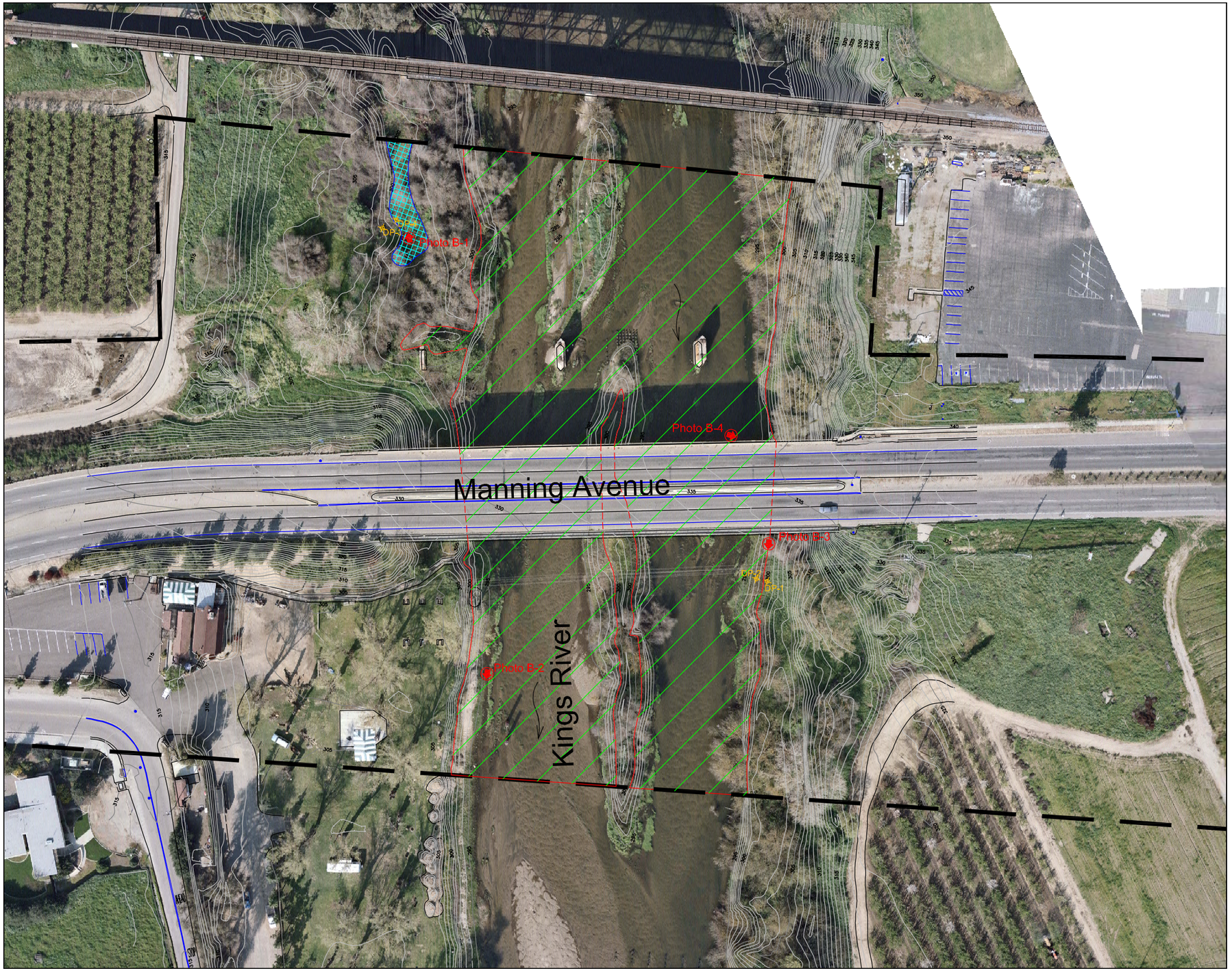
NOTES:
1. This exhibit depicts information and data produced in strict conformance with the U.S. Army Corps of Engineers wetland delineation methods described in the 1987 Corps of Engineers Wetlands Delineation Manual and 2006 Arid West Region Supplement.
2. Field work conducted by Jones & Stokes on May 10, 2007.
3. Aerial Photo: Quincy Engineering, Inc. (Date Flown: August 2003)
4. Topo Base Map: Aerial Photomapping Services (Date Created: August 2005)

Sheet 1 | Sheet 2 | Sheet 3

| | |
|---|---|
| DRAWN BY: AA | SCALE: 1"=100' |
| CHECKED BY: SF | DATE: AUGUST 6, 2007 |
| DWG. NO.: Wetland Delineation.dwg | JOB NO: 06540.06 |
| STATUS: PRELIMINARY | SHEET NO.: 1 of 3 |
| DATE VERIFIED: TBD | CORPS REGULATORY #: TBD |

| REV. DATE | DESCRIPTION | BY | APP'D |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

PREPARED FOR:
City of Reedley
Contact: Dana Ritschel (559) 637-4200




# EXHIBIT A
## SHEET 2

PRELIMINARY DELINEATION OF
WETLANDS AND OTHER WATERS
OF THE UNITED STATES

MANNING AVENUE BRIDGE REPLACEMENT PROJECT

FRESNO COUNTY, CALIFORNIA

AUGUST 6, 2007

| HABITAT | ACRES |
|---|---|
| **WETLANDS** | |
| Riverine Wetlands | 0.059 |
| RW-01 | 0.059 |
| **OTHER WATERS OF THE U.S.** | |
| Perennial Drainage (Kings River) | 3.877 |
| PD-01 | 3.877 |
| TOTAL ACREAGE | 3.936 |

LEGEND

- OHWM (Dashed where inferred)
- Data Point
- Delineation Area Boundary
- Direction of Water Flow
- Photo Point

Scale 1"=100'

100 0 100

Contour Interval: 1 Foot

NOTES:
1. This exhibit depicts information and data produced in strict conformance with the U.S. Army Corps of Engineers wetland delineation methods described in the 1987 Corps of Engineers Wetlands Delineation Manual and 2006 Arid West Region Supplement.
2. Field work conducted by Jones & Stokes on May 10, 2007.
3. Aerial Photo: Quincy Engineering, Inc. (Date Flown: August 2003)
4. Topo Base Map: Aerial Photomapping Services (Date Created: August 2005)

Sheet 1 | Sheet 2 | Sheet 3

| | |
|---|---|
| DRAWN BY: AA | SCALE: 1"=100' |
| CHECKED BY: SF | DATE: AUGUST 6, 2007 |
| DWG. NO.: Wetland Delineation.dwg | JOB NO.: 06540.06 |
| STATUS: PRELIMINARY | SHEET NO.: 2 of 3 |
| DATE VERIFIED: TBD | CORPS REGULATORY #: TBD |

| REV. DATE | DESCRIPTION | BY | APP'D |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

PREPARED FOR:
City of Reedley
Contact: Dana Ritschel (559) 637-4200


# EXHIBIT A
## SHEET 3

PRELIMINARY DELINEATION OF
WETLANDS AND OTHER WATERS
OF THE UNITED STATES

MANNING AVENUE BRIDGE REPLACEMENT PROJECT

FRESNO COUNTY, CALIFORNIA

AUGUST 6, 2007

| HABITAT | ACRES |
|---|---|
| **WETLANDS** | |
| Riverine Wetlands | 0.059 |
| RW-01 | 0.059 |
| **OTHER WATERS OF THE U.S.** | |
| Perennial Drainage (Kings River) | 3.877 |
| PD-01 | 3.877 |
| TOTAL ACREAGE | 3.936 |

LEGEND

- OHWM (Dashed where Inferred)
- Data Point
- Delineation Area Boundary
- Direction of Water Flow
- Photo Point

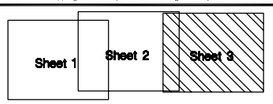
Scale 1"=100'

100 0 100

Contour Interval: 1 Foot

NOTES:

1. This exhibit depicts information and data produced in strict conformance with the U.S. Army Corps of Engineers wetland delineation methods described in the 1987 Corps of Engineers Wetlands Delineation Manual and 2006 Arid West Region Supplement.
2. Field work conducted by Jones & Stokes on May 10, 2007.
3. Aerial Photo: Quincy Engineering, Inc. (Date Flown: August 2003)
4. Topo Base Map: Aerial Photomapping Services (Date Created: August 2005)




| | |
|---|---|
| DRAWN BY: AA | SCALE: 1"=100' |
| CHECKED BY: SF | DATE: AUGUST 6, 2007 |
| DWG. NO.: Wetland Delineation.dwg | JOB NO.: 06540.06 |
| STATUS: PRELIMINARY | SHEET NO.: 3 of 3 |
| DATE VERIFIED: TBD | CORPS REGULATORY #: TBD |

| REV. DATE | DESCRIPTION | BY | APP'D |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

PREPARED FOR:

City of Reedley
Contact: Dana Ritschel (559) 637-4200

# Appendix A Plant Species Observed in the Delineation Area

# Appendix A Plant Species Observed in the Delineation Area

**Table A-1. Plant Species Observed in the Delineation Area***

| Scientific Name | Common Name | Indicator Status[1] |
|---|---|---|
| ***Achillea millefolium*** | yarrow | FACU |
| *Anthriscus caucalis* | bur-chervil | UPL |
| ***Artemisia douglasiana*** | mugwort | FACW |
| *Avena fatua* | wild oat | UPL |
| *Bromus diandrus* | ripgut brome | UPL |
| *Bromus hordeaceus* | soft chess brome | FAC– |
| *Bromus madritensis* | foxtail chess | NI |
| *Capsella bursa-pastoris* | shepard's purse | FAC– |
| *Carex barbarae* | Santa Barbara sedge | FACW |
| ***Cephalanthus occidentalis*** var. ***californicus*** | button bush | OBL |
| *Cerastium glomeratum* | mouse-ear chickweed | FACU |
| *Chamomilla suaveolens* | pineapple weed | FACU |
| *Chenopodium album* | pigweed | FAC |
| ***Conyza canadensis*** | horseweed | FAC |
| *Cynodon dactylon* | Bermuda grass | FAC |
| ***Cyperus eragrostis*** | tall flatsedge | FACW |
| ***Datura wrightii*** | jimson weed | UPL |
| ***Epilobium ciliatum*** | willow herb | FACW |
| *Erodium cicutarium* | red-stemmed filaree | UPL |
| *Eucalyptus* sp. | eucalyptus | – |
| ***Fraxinus latifolia*** | Oregon ash | FACW |
| *Gallium* sp. | bedstraw | – |
| *Gnaphalium luteo-album* | cudweed | FACW– |
| ***Grindelia camporum*** | gumplant | FACU |
| *Hirschfeldia incana* | hirschfeldia | – |
| *Hordeum murinum* ssp. *leporinum* | foxtail barley | UPL |
| ***Juglans californica*** | California black walnut | FAC |
| *Juncus balticus* | baltic rush | OBL |
| *Lactuca serriola* | prickly lettuce | FAC |
| *Lolium multiflorum* | Italian ryegrass | FAC |
| ***Lotus scoparius*** | California broom | UPL |
| ***Marah fabaceus*** | wild cucumber | – |
| *Medicago polymorpha* | burclover | – |
| *Mimulus guttatus* | common monkeyflower | OBL |
| *Morus alba* | white mulberry | NI |
| ***Muhlenbergia rigens*** | deergrass | FACW |

| Scientific Name | Common Name | Indicator Status[1] |
|---|---|---|
| *Myriophyllum aquaticum* | parrot's feather | OBL |
| *Nicotiana glauca* | tree tobacco | FAC |
| *Phalaris aquatica* | Harding grass | FAC+ |
| ***Phalaris arundinacea*** | reed canary grass | OBL |
| *Plantago major* | common plantain | FACW– |
| *Poa annua* | annual bluegrass | FACW– |
| ***Populus fremontii*** | Fremont cottonwood | FACW |
| *Polygonum persicaria* | lady's thumb | FACW |
| *Polypogon monspeliensis* | rabbit's-foot grass | FACW+ |
| ***Potentilla* sp.** | cinquefoil | – |
| ***Quercus lobata*** | valley oak | FAC |
| *Raphanus sativus* | wild radish | UPL |
| ***Rorippa palustris*** | bog yellow-cress | OBL |
| *Rubus discolor* | Himalaya blackberry | FACW |
| *Rumex crispus* | curly dock | FACW– |
| *Rumex pulcher* | fiddle dock | FAC+ |
| ***Salix exigua*** | narrow-leaved willow | OBL |
| ***Salix goodingii*** | black willow | OBL |
| ***Salix lasiolepis*** | arroyo willow | FACW |
| *Salsola tragus* | Russian thistle | FACU+ |
| ***Sambucus mexicana*** | blue elderberry | FAC |
| *Schinus molle* | Peruvian pepper tree | – |
| *Senecio vulgaris* | old man of spring | NI |
| *Silybum marinum* | milk thistle | UPL |
| *Sonchus oleraceus* | common sow thistle | NI |
| *Sorghum halapense* | Johnson grass | FACU |
| *Tribulus terrestris* | puncture vine | – |
| ***Urtica dioica* ssp. *holosericea*** | stinging nettle | FACW |
| *Verbascum blatteria* | moth mullein | FACW |
| *Veronica anagallis-aquatica* | water speedwell | OBL |
| *Vicia sativa* | common vetch | FACU |
| ***Vitis californica*** | California wild grape | FACW |

* Native species indicated by bold type.

[1] Indicator Status Categories:

OBL = Obligate wetland: plants that occur almost always (estimated >99% probability) in wetlands.

FACW = Facultative wetland: plants that usually occur (estimated 67–99% probability) in wetlands.

FAC = Facultative: plants that equally likely to occur (estimated 34–66% probability) in wetlands or nonwetlands.

FACU = Facultative upland: plants that usually occur (estimated 67–99 probability) in nonwetlands.

UPL = Obligate upland: plants that occur almost always (estimated >99% probability) in nonwetlands.

NI = No indicator: information is lacking.

– = Not listed in Reed (1988).

# Appendix B Representative Photographs


Photo B-1. Looking north at Riverine Wetland RW-01.
*(Photo taken 5-10-07)*


Photo B-2. Looking south along west bank of Kings River (PD-01).
*(Photo taken 5-10-07)*


Photo B-3. Looking south at Riverine Wetland fringe.
*(Photo taken 5-10-07)*


Photo B-4. Looking southeast at OHWM on Manning Ave Bridge support.
*(Photo taken 5-10-07)*

# Appendix C Wetland Data Forms

# WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **Manning Avenue Bridge Replacement Project** City/County: **Reedley/Fresno County** Data Point: **DP-1**

Applicant/Owner: **City of Reedley** State: **CA** Date: **10-May-07**

Investigator(s): **S. Frazier, L. Webber** Section, Township, Range: **Section 21, T 15S, R 23E, MDBM**

Landform (hillslope, terrace, etc.): **River Terrace Escarpment** Local relief (concave, convex, none): **planar** Slope (%): **4%**

Subregion (LRR): **C - Mediterranean California** Lat: **36 36' 14" N** Long: **119 27' 59"W** Datum: **WGS84**

Soil Map Unit Name: **Grangeville fine sandy loam** NWI classification: **Upland**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No ____ (If no, explain in Remarks)

Are Vegetation **no** Soil **no** or Hydrology **no** significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

Are Vegetation **no** Soil **no** or Hydrology **no** naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | | |
|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | | No | X |
| Hydric Soil Present? | Yes | | No | X |
| Wetland Hydrology Present? | Yes | | No | X |

**Is the Sampled Area within a wetland?** Yes ____ No **X**

Remarks:

## VEGETATION

| Tree Stratum (scientific names) woody plants >3" dbh | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 0 | | |
| **Sapling/Shrub Stratum (woody plants <3"dbh)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 0 | | |
| **Herb Stratum (non-woody plants, regardless of size)** | | | |
| 1. Bromus madritensis | 60 | yes | UPL |
| 2. Rumex crispus | 10 | no | FACW- |
| 3. Avena fatua | 10 | no | UPL |
| 4. Lactuca serriola | 5 | no | FAC |
| 5. Xanthium strumarium | 5 | no | FAC+ |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | 90 | | |
| **Woody Vine Stratum (regardless of size)** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | 0 | | |

% Bare ground in Herb Stratum 0 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC 0 (A/B)

**Prevalence index worksheet**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 70 | x 5 = | 350 |
| Column Total: | 90 (A) | | 400 (B) |

Prevalence Index = B/A = 4.4

**Hydrophytic vegetation indicators**

____ Dominance test is >50%

____ Prevalence index is ≤ 3.0[1]

____ Morphological adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soils and wetland hydrology must be present

**Hydrophytic Vegetation Present?** Yes ____ No **X**

Remarks:

## SOIL

**Data point:** DP-1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)**

| Depth | Matrix | | Redox Features | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Contrast[3] | Texture | Comments |
| 0-6 | 2.5Y2/2 | 99 | 10YR3/3 | 1 | C | M | F | vfsl | --- |
| 6-15 | 2.5Y3/2 | 97 | 10YR3/3 | 3 | C | M | F | l | --- |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix

[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):

Type: none

Depth (inches): N/A

**Hydric Soil Present?** **Yes** ___ **No** **X**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ___ | No **X** | Depth (inches): --- | |
| Water Table Present? | Yes ___ | No **X** | Depth (inches): --- | **Wetland Hydrology** |
| Saturation Present? (includes capillary fringe) | Yes ___ | No **X** | Depth (inches): --- (12 inch determination) | **Present?** **Yes** ___ **No** **X** |

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data point located on terrace escarpment, approximately 1 foot higher than apparent ordinary high water mark

**Texture and Rock Fragment Content**

**Texture**

| | | | | |
|---|---|---|---|---|
| cos - coarse sand | lcos - loamy coarse sand | sl - sandy loam | scl - sandy clay loam | |
| s - sand | ls - loamy sand | fsl - fine sandy loam | cl - clay loam | |
| fs - fine sand | lfs - loamy fine sand | vfsl - very fine sandy loam | sicl - silty clay loam | |
| vfs - very fine sand | lvfs - loamy very fine sand | l - loam | sc - sandy clay | |
| | cosl - coarse sandy loam | sil - silt loam | sic - silty clay | |
| | | si - silt | c - clay | |

**Rock Fragments**

| | |
|---|---|
| gr - gravelly | xcb - extremely cobbly |
| vgr - very gravelly | st - stony |
| xgr - extremely gravelly | vst - very stony |
| cb - cobbly | xst - extremely stony |
| vcb - very cobbly | |

# WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **Manning Avenue Bridge Replacement Project** City/County: **Reedley/Fresno County** Data Point: **DP-2**

Applicant/Owner: **City of Reedley** State: **CA** Date: **10-May-07**

Investigator(s): **S. Frazier, L. Webber** Section, Township, Range: **Section 21, T 15S, R 23E, MDBM**

Landform (hillslope, terrace, etc.): **River Terrace** Local relief (concave, convex, none): **planar** Slope (%): **4%**

Subregion (LRR): **C - Mediterranean California** Lat: **36 36' 14" N** Long: **119 27' 59"W** Datum: **WGS84**

Soil Map Unit Name: **Grangeville fine sandy loam** NWI classification: **PEM**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No ____ (If no, explain in Remarks)

Are Vegetation **no** Soil **no** or Hydrology **no** significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

Are Vegetation **no** Soil **no** or Hydrology **no** naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | | |
|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | X | No | |
| Hydric Soil Present? | Yes | X | No | |
| Wetland Hydrology Present? | Yes | X | No | |

**Is the Sampled Area within a wetland?** Yes **X** No ____

Remarks:

## VEGETATION

| Tree Stratum (scientific names) woody plants >3" dbh | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 0 | | |
| **Sapling/Shrub Stratum (woody plants <3"dbh)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 0 | | |
| **Herb Stratum (non-woody plants, regardless of size)** | | | |
| 1. Juncus sp. | 50 | yes | FACW/OBL |
| 2. Phalaris arundinacea | 15 | yes | OBL |
| 3. Rorippa palustris | 10 | no | OBL |
| 4. Equisetum sp. | 2 | no | FAC/FACW |
| 5. Conyza canadensis | 2 | no | FAC |
| 6. Polypogon monspeliensis | 2 | no | FACW+ |
| 7. Gnathalium luteoalbum | 2 | no | FACW+ |
| 8. Mimulus guttatus | 2 | no | OBL |
| Total Cover: | 85 | | |
| **Woody Vine Stratum (regardless of size)** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | 0 | | |

% Bare ground in Herb Stratum 0 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species that are OBL, FACW, or FAC **100** (A/B)

**Prevalence index worksheet**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 27 | x 1 = | 27 |
| FACW species | 54 | x 2 = | 108 |
| FAC species | 4 | x 3 = | 12 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Total: | 85 (A) | | 147 (B) |

Prevalence Index = B/A = 1.7

**Hydrophytic vegetation indicators**

- X Dominance test is >50%
- X Prevalence index is ≤ 3.0[1]
- ____ Morphological adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soils and wetland hydrology must be present

**Hydrophytic Vegetation Present?** Yes **X** No ____

Remarks:

## SOIL

**Data point:** DP-2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)**

| Depth | Matrix | | Redox Features | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Contrast[3] | Texture | Comments |
| 0-5 | 2.5Y3/2 | 99 | 10YR3/3 | 1 | C | M | F | vfsl | --- |
| 5-14 | 2.5Y4/2 | 91 | 10YR3/4 | 9 | C | M | P | sil | --- |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type: none
Depth (inches): N/A

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- X Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- X Drift Deposits (B3) (Riverine)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): --- | |
| Water Table Present? | Yes ___ | No X | Depth (inches): --- | **Wetland Hydrology** |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): --- (12 inch determination) | **Present?** **Yes** X **No** ___ |

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data point located below ordinary high water mark of Kings River

**Texture and Rock Fragment Content**

**Texture**

| | | | | |
|---|---|---|---|---|
| cos - coarse sand | lcos - loamy coarse sand | sl - sandy loam | scl - sandy clay loam | |
| s - sand | ls - loamy sand | fsl - fine sandy loam | cl - clay loam | |
| fs - fine sand | lfs - loamy fine sand | vfsl - very fine sandy loam | sicl - silty clay loam | |
| vfs - very fine sand | lvfs - loamy very fine sand | l - loam | sc - sandy clay | |
| | cosl - coarse sandy loam | sil - silt loam | sic - silty clay | |
| | | si - silt | c - clay | |

**Rock Fragments**

| | |
|---|---|
| gr - gravelly | xcb - extremely cobbly |
| vgr - very gravelly | st - stony |
| xgr - extremely gravelly | vst - very stony |
| cb - cobbly | xst - extremely stony |
| vcb - very cobbly | |

# WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **Manning Avenue Bridge Replacement Project** City/County: **Reedley/Fresno County** Data Point: **DP-3**

Applicant/Owner: **City of Reedley** State: **CA** Date: **10-May-07**

Investigator(s): **S. Frazier, L. Webber** Section, Township, Range: **Section 21, T 15S, R 23E, MDBM**

Landform (hillslope, terrace, etc.): **River Terrace** Local relief (concave, convex, none): **planar** Slope (%): **4%**

Subregion (LRR): **C - Mediterranean California** Lat: **36 36' 14" N** Long: **119 27' 59"W** Datum: **WGS84**

Soil Map Unit Name: **Grangeville fine sandy loam** NWI classification: **Upland**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No _____ (If no, explain in Remarks)

Are Vegetation **no** Soil **no** or Hydrology **no** significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

Are Vegetation **no** Soil **no** or Hydrology **no** naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | | |
|---|---|---|---|---|
| Hydrophytic Vegetation Present? | **Yes** | **X** | **No** | |
| Hydric Soil Present? | **Yes** | | **No** | **X** |
| Wetland Hydrology Present? | **Yes** | | **No** | **X** |

**Is the Sampled Area within a wetland?** **Yes** _____ **No** **X**

Remarks:

## VEGETATION

| Tree Stratum (scientific names) woody plants >3" dbh | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 0 | | |
| **Sapling/Shrub Stratum (woody plants <3"dbh)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 0 | | |
| **Herb Stratum (non-woody plants, regardless of size)** | | | |
| 1. Anthriscus caucalis | 30 | yes | UPL |
| 2. Rorippa palustris | 20 | yes | OBL |
| 3. Vitis californica | 20 | yes | FACW |
| 4. Carex barbarae | 10 | no | FACW |
| 5. Chenopodium album | 5 | no | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | 85 | | |
| **Woody Vine Stratum (regardless of size)** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | 0 | | |

% Bare ground in Herb Stratum 0 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species that are OBL, FACW, or FAC **67** (A/B)

**Prevalence index worksheet**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20 | x 1 = | 20 |
| FACW species | 30 | x 2 = | 60 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 30 | x 5 = | 150 |
| Column Total: | 85 (A) | | 245 (B) |

Prevalence Index = B/A = 2.9

**Hydrophytic vegetation indicators**

**X** Dominance test is >50%

**X** Prevalence index is ≤ 3.0[1]

_____ Morphological adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soils and wetland hydrology must be present

**Hydrophytic Vegetation Present?** **Yes** **X** **No** _____

Remarks:

## SOIL

**Data point:** DP-3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)**

| Depth | Matrix | | Redox Features | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Contrast[3] | Texture | Comments |
| 0-16 | 10YR3/2 | 100 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type: none
Depth (inches): N/A

**Hydric Soil Present?** **Yes** ___ **No** **X**

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ___ | No **X** | Depth (inches): --- | |
| Water Table Present? | Yes ___ | No **X** | Depth (inches): --- | **Wetland Hydrology** |
| Saturation Present? (includes capillary fringe) | Yes ___ | No **X** | Depth (inches): --- (12 inch determination) | **Present?** **Yes** ___ **No** **X** |

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data point located on high river terrace, several feet above depression sampled by data point DP-4

**Texture and Rock Fragment Content**

**Texture**

| | | | | |
|---|---|---|---|---|
| cos - coarse sand | lcos - loamy coarse sand | sl - sandy loam | scl - sandy clay loam | |
| s - sand | ls - loamy sand | fsl - fine sandy loam | cl - clay loam | |
| fs - fine sand | lfs - loamy fine sand | vfsl - very fine sandy loam | sicl - silty clay loam | |
| vfs - very fine sand | lvfs - loamy very fine sand | l - loam | sc - sandy clay | |
| | cosl - coarse sandy loam | sil - silt loam | sic - silty clay | |
| | | si - silt | c - clay | |

**Rock Fragments**

| | |
|---|---|
| gr - gravelly | xcb - extremely cobbly |
| vgr - very gravelly | st - stony |
| xgr - extremely gravelly | vst - very stony |
| cb - cobbly | xst - extremely stony |
| vcb - very cobbly | |

# WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **Manning Avenue Bridge Replacement Project** City/County: **Reedley/Fresno County** Data Point: **DP-4**

Applicant/Owner: **City of Reedley** State: **CA** Date: **10-May-07**

Investigator(s): **S. Frazier, L. Webber** Section, Township, Range: **Section 21, T 15S, R 23E, MDBM**

Landform (hillslope, terrace, etc.): **River Terrace** Local relief (concave, convex, none): **planar** Slope (%): **4%**

Subregion (LRR): **C - Mediterranean California** Lat: **36 36' 14" N** Long: **119 27' 59"W** Datum: **WGS84**

Soil Map Unit Name: **Grangeville fine sandy loam** NWI classification: **PEM**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes **X** No ____ (If no, explain in Remarks)

Are Vegetation **no** Soil **no** or Hydrology **no** significanly disturbed? Are "Normal Circumstances" present? ☑ YES ☐ NO

Are Vegetation **no** Soil **no** or Hydrology **no** naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | | |
|---|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | X | No | |
| Hydric Soil Present? | Yes | X | No | |
| Wetland Hydrology Present? | Yes | X | No | |

**Is the Sampled Area within a wetland?** Yes **X** No ____

Remarks:

## VEGETATION

| Tree Stratum (scientific names) woody plants >3" dbh | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 0 | | |
| **Sapling/Shrub Stratum (woody plants <3"dbh)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 0 | | |
| **Herb Stratum (non-woody plants, regardless of size)** | | | |
| 1. Carex barbarae | 70 | yes | FACW |
| 2. Phalaris arundinacea | 15 | yes | OBL |
| 3. Polygonum lapathifolium | 10 | no | FACW |
| 4. Conyza canadensis | 5 | no | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | 100 | | |
| **Woody Vine Stratum (regardless of size)** | | | |
| 1.Vitis californica | 30 | yes | FACW |
| 2. | | | |
| Total Cover: | 30 | | |

% Bare ground in Herb Stratum 0 % Cover of Biotic Crust 0

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC 100 (A/B)

**Prevalence index worksheet**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 15 | x 1 = | 1 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Total: | 100 (A) | | 175 (B) |

Prevalence Index = B/A = 1.8

**Hydrophytic vegetation indicators**

X Dominance test is >50%

X Prevalence index is ≤ 3.0[1]

Morphological adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soils and wetland hydrology must be present

**Hydrophytic Vegetation Present?** Yes **X** No ____

Remarks:

## SOIL

**Data point:** DP-4

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)**

| Depth | Matrix | | Redox Features | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Contrast[3] | Texture | Comments |
| 0-7 | 2.5Y3/2 | 100 | --- | --- | --- | --- | --- | --- | --- |
| 7-16 | 2.5Y3/1 | 92 | 7.5YR3/3 | 8 | C | M | P | sil | --- |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1]Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
[2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix [3]Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pool (F9)

Indicators for Problematic Hydric Soils:[4]

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A 10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)
- ___ Listed on National/Local Hydric Soils List

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present

Restrictive Layer (if present):
Type: none
Depth (inches): N/A

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2) (w/in 12")
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- X Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1) (w/in 12")
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soil (C6)
- X Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ___ | No **X** | Depth (inches): --- | |
| Water Table Present? | Yes ___ | No **X** | Depth (inches): --- | **Wetland Hydrology** |
| Saturation Present? (includes capillary fringe) | Yes ___ | No **X** | Depth (inches): --- (12 inch determination) | **Present?** **Yes** X **No** ___ |

Describe Recorded Data (stream guage, monitoring well, aerial photos, previous inspections), if available:

Remarks: Due to its depressional topography and proximity to Kings River channel, area sampled by this data point is likely subject to shallow groundwater during the wet season

**Texture and Rock Fragment Content**

**Texture**

| | | | | |
|---|---|---|---|---|
| cos - coarse sand | lcos - loamy coarse sand | sl - sandy loam | scl - sandy clay loam | |
| s - sand | ls - loamy sand | fsl - fine sandy loam | cl - clay loam | |
| fs - fine sand | lfs - loamy fine sand | vfsl - very fine sandy loam | sicl - silty clay loam | |
| vfs - very fine sand | lvfs - loamy very fine sand | l - loam | sc - sandy clay | |
| | cosl - coarse sandy loam | sil - silt loam | sic - silty clay | |
| | | si - silt | c - clay | |

**Rock Fragments**

| | |
|---|---|
| gr - gravelly | xcb - extremely cobbly |
| vgr - very gravelly | st - stony |
| xgr - extremely gravelly | vst - very stony |
| cb - cobbly | xst - extremely stony |
| vcb - very cobbly | |

# Appendix D Preliminary Jurisdictional Determination Forms

**APPROVED JURISDICTIONAL DETERMINATION FORM**
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

**SECTION I: BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): ---**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, File Name and Number to be Determined**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: CA County/parish/borough: Fresno City: Reedley

Center coordinates of site (lat/long in degree decimal format): Lat. 36.603889° **N**, Long. 119.466389° **W**.

Universal Transverse Mercator: 279378E 4053766N (UTM Zone 11 NAD 83, meters)

Name of nearest waterbody: Kings River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: None (diverted into canal/ditch system near the town of Stratford, CA)

Name of watershed or Hydrologic Unit Code (HUC): 18030012 (Tulare Buena Vista Lakes)

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☐ Office (Desk) Determination. Date: ---

☐ Field Determination. Date(s): ---

**SECTION II: SUMMARY OF FINDINGS**

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.

☒ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area (check all that apply): [1]**

☒ TNWs, including territorial seas
☒ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☐ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☐ Isolated (interstate or intrastate) waters, including isolated wetlands

**b. Identify (estimate) size of waters of the U.S. in the review area:**

Non-wetland waters: linear feet: width (ft) and/or 3.877 acres.
Wetlands: 0.059 acres.

**c. Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**

Elevation of established OHWM (if known): 299 feet.

**2. Non-regulated waters/wetlands (check if applicable):[3]**

☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.

[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

[3] Supporting documentation is presented in Section III.F.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

**The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below**.

**1. TNW**

Identify TNW: **Kings River (PD-1)**.

Summarize rationale supporting determination: The Kings River has been used in the past for interstate commerce (rafting, fishing, irrigation, power generation at Pine Flat Dam).

**2. Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is "adjacent": Although riverine wetland RW-1 does not appear to have a regular surface water connection to the Kings River (a traditional navigable water of the U.S), it is located in close proximity (~100 feet) to the Kings River channel (a TNW) and appears to intercept shallow groundwater and occasional overbank flows during the wet season. .

**B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

**A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.**

**If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.**

**1. Characteristics of non-TNWs that flow directly or indirectly into TNW**

**(i) General Area Conditions:**

Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

**(ii) Physical Characteristics:**

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

**Tributary** properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

**(iii) Chemical Characteristics:**
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

**(iv) Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

**2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

**(iii) Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

**3. Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

| Directly abuts? (Y/N) | Size (in acres) | Directly abuts? (Y/N) | Size (in acres) |
|---|---|---|---|

Summarize overall biological, chemical and physical functions being performed: .

## C. SIGNIFICANT NEXUS DETERMINATION

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

## D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

**E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]**
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

**Identify water body and summarize rationale supporting determination:** .

---

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
**[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: .
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date): .
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** .

Appendix D

# Storm Water Quality Best Management Practices

# Appendix D Storm Water Quality Best Management Practices

## Introduction

This section describes common BMPs available for stormwater quality management and erosion control, as summarized from Caltrans' *Statewide Stormwater Quality Practice Guidelines* (California Department of Transportation 2003). Other BMPs may be relevant to the proposed project, depending on the season in which construction occurs, the construction methods used, the amount of soil disturbed, and the natural resources present. The specific BMPs implemented for the proposed project would be shown on engineering plans and specifications. The general contractors performing the work would be responsible for constructing or implementing the measures and regularly inspecting and maintaining them in good working order.

To minimize potential impacts on water quality, BMPs would be implemented as outlined in engineering plans and specifications. All necessary BMPs should be implemented so that construction practices avoid excessive erosion and sedimentation, prevent off-site contamination from construction materials, reduce stormwater discharges from the construction site, and reduce impacts on waterways once the proposed project is completed.

The following discussion provides general guidelines for each BMP. The specific locations for each measure would be identified in the project's SWPPP and/or drainage plan. The number following each BMP corresponds to the numbering system found in Caltrans' *Statewide Stormwater Quality Practice Guidelines* handbook.

### Temporary Sediment Control (4.5.1)

Temporary sediment control consists of installing temporary linear sediment barriers, or silt fences. A silt fence is a barrier of permeable fabric designed to intercept and impede sediment-laden sheet flow runoff. Silt fences allow sediment to settle from runoff before water leaves the construction site. Silt fences, typically, are placed below the toe of exposed and erodible slopes, downslope of exposed soil areas, and around temporary soil stockpiles.

### Temporary Soil Stabilization (4.5.2)

Loose bulk materials should be applied to the soil surface to reduce erosion by protecting bare soil from rainfall impacts, increasing infiltration, and reducing runoff. Appropriate soil cover techniques include mulching, hydroseeding, applying soil binders, using straw, and applying geotextile mats. Mulches and straw moderate soil temperature, a characteristic that is beneficial for plant establishment and growth. Mulches and straw are used, generally, to complement seeding and vegetation-establishment techniques, although some mulches, such as wood/bark chips, can be used in the absence of long-established vegetation.

### Waste Management (4.5.10)
Appropriate waste management measures can prevent or reduce the discharge of pollutants to stormwater. Waste management consists of implementing procedural and structural BMPs for handling, storing, and disposing of wastes generated by construction to prevent the release of waste materials into stormwater. Waste management BMPs may include spill prevention and control, solid waste management, hazardous waste management, concrete waste management, and sanitary waste management.

### Materials Handling (4.5.11)
Materials handling consists of implementing procedural and structural BMPs for handling, storing, and using construction materials to prevent the release of those materials into stormwater.

### Vehicle and Equipment Operations (4.5.12)
Keeping vehicles and equipment clean and following appropriate fueling and maintenance procedures would prevent or reduce the discharge of pollutants to stormwater. In general, cleaning should be conducted where the wash water is contained and allowed to evaporate. Fueling operations should be conducted in designated areas located at least 50 feet from downstream drainage features, and vehicles should not be left unattended. Absorbent cleanup materials for spills should be available in fueling areas, and vehicles should be inspected daily for drips and leaks, which should be repaired.

### Preservation of Existing Vegetation (4.5.3)
The protection of desirable plants and trees in areas subject to land-disturbing activities is beneficial. Existing vegetation should be used as an effective form of erosion and sediment control as well as watershed protection, landscape beautification, dust control, pollution control, noise reduction, and shade. Vegetation to be preserved should be identified on construction documents and marked in the field. Equipment should be kept away from vegetation to prevent damage to the vegetation.

### Water Conservation Practices (4.5.15)
Water conservation practices are methods by which water use is prevented from causing erosion or the transport of pollutants off-site. These practices include locating designated equipment wash areas away from exposed areas.

### Removal of Sediment from Dewatering Effluent (4.5.17)
The discharge of potentially polluted seepage to stormwater should be prevented or reduced by discharging any seepage water into siltation basins. Sediment-laden water would be filtered before it is discharged off-site. This BMP is also necessary to prevent the discharge of water contaminated by petroleum products or other toxic materials into storm drains. The amount of dewatering necessary for the proposed project (if any) is unknown. Dewatering may be needed for work in the Kings River and deep land excavations.

### Scheduling (4.5.3)

A specified work schedule should be used to coordinate the timing of land-disturbing activities and installation of erosion and sedimentation control practices to reduce on-site erosion and off-site sedimentation. For some critical situations, specific scheduling requirements may need to be included in the contract's special provisions rather than left to the construction contractor. For example, limiting construction that involves exposure of graded soils until the summer dry season is a requirement typically specified in construction plans.

### Temporary Concentrated-Flow Conveyance Controls (4.5.5)

Temporary, or permanent, concentrated-flow conveyance structures intercept, divert, and convey surface runoff to prevent erosion and reduce pollutant loading. Typical measures include earth dikes, drainage swales, lined ditches, outlet protection and energy dissipation devices, and slope drains. Specific areas that may require such measures would be identified before construction and included in construction documents.

Earth dikes, drainage swales, and lined ditches are typically used to control sheet flow runoff and should be considered for implementation to

- convey surface runoff down sloping land;
- intercept and divert runoff;
- avoid sheet flow over sloped surfaces;
- direct runoff toward a stabilized watercourse, drainage pipe, or channel;
- prevent runoff from accumulating at the base of steep grades; and
- avoid flood damage along roadways and around facility improvements.

Outlet protection and energy dissipation devices are placed at pipe outlets to prevent scour and reduce the velocity or energy of exiting stormwater flows. Appropriate structures include flared culvert inlets/outlets and riprap or concrete aprons at the ends of culverts. Outlets on slopes of more than 10% should have additional protective measures installed.

Slope drains are used to intercept and direct surface runoff or groundwater into a stabilized watercourse, trapping device, or stabilized area. Slope drains are typically used with lined ditches to intercept and direct runoff away from cut-and-fill slopes.

## Citation

California Department of Transportation (Caltrans). 2003. Storm water quality practice guidelines. (CTSW-RT-02-009.) May. Sacramento, CA.

*Kings River Overflow Bridge Replacement*

*Riparian Habitat MMP*

# Riparian Habitat Mitigation and Monitoring Plan

For the Kings River Overflow Bridge Replacement Project

Fresno County, California

Mitigation Site Located Outside Project Limits

06-FRE-180- PM 77.1- 77.2

EA 06-0H170

February 17, 2012

Prepared By: _____ Date: 2/17/12

Ronald Cummings, Wildlife Biologist
(559) 445-6460
Central Region Biology Branch
District 6/Central Region/Caltrans

Approved By: _____ Date: 2/17/12

Frank Meraz, Interim Biology Branch Chief
(559) 445-6260
Central Region Biology Branch
District 6/Central Region/Caltrans

## Summary

The California Department of Transportation (Caltrans) proposes to replace the existing Kings River Overflow Bridge (#42-0074) near the small town of Minkler, CA. The project area lies on State Route (SR) 180 between post miles (PM) 77.1 and 77.2 in Fresno County. The new structure will include an upgrade of 8-foot wide shoulders. To complete the work, a temporary construction easement 25 feet wide will be required on either side of the bridge. This area would include temporary equipment access roads, equipment staging, tree removal, and utility relocation. Effects to riparian habitat are anticipated as a result of the proposed project.

Mitigation measures are proposed to compensate for the removal of riparian vegetation from the project area. This document will address mitigation and monitoring criteria for the Kings River Overflow riparian revegetation mitigation site.

Impacts to 13 riparian trees within 0.15 acres (ac) are anticipated as a result of the construction of the proposed project. Compensatory mitigation will consist of planting a total of 60 trees on approximately 1.1 acres of suitable land within the Kings River watershed. To ensure a success rate of at least 80% at the end of five years, a temporary irrigation system will be established during the plant establishment period of three years. The mitigation site will be monitored for a period of five years to insure success criteria is being met.

Permanent impacts to wetlands are also anticipated as a result of the project. Caltrans has completed mitigation for permanent impacts to 0.016 ac of wetlands by paying a compensatory fee to the Army Corps of Engineers' (ACOE) In-Lieu Fee Program (ILFP).

## Introduction

"Riparian habitat is composed of the trees and other vegetation and physical features normally found on the stream banks and flood plains associated with streams, lakes, or other bodies of water. Scientists have long recognized the unique value riparian habitat holds for fish and wildlife species." (WCB, 2003). Riparian habitat was once extensive along streams throughout the San Joaquin Valley and the surrounding foothills, but is now reduced to scattered, isolated remnants of older stands and young stands due to flood control, water diversion, agricultural development, and urban expansion (Schoenherr, 1992).

Although there is no established protocol that describes mitigation for impacts to riparian vegetation, the California Department of Fish and Game (CDFG) recommends replanting or the purchase of mitigation credits for projects that require a Streambed Alteration Agreement.

The replanting of all riparian vegetation removed at Kings River Overflow at a ratio of 3:1 (10:1 for heritage trees) is a commitment Caltrans has proposed in the Natural Environment Study (NES) dated June, 2009. Caltrans also proposed that construction shall not begin until CDFG has approved the revegetation plan.

Currently Caltrans is planning on contracting out the revegetation work, which will include the irrigation of the newly planted tree seedlings for three years, and routine maintenance of the site. Routine maintenance will include inspections of plantings, replacement of dead plants when necessary, weeding of non-target species, and other treatments necessary to improve the overall success of the mitigation program.

A survey of the existing riparian habitat to be affected by the project was conducted on January 8, 2009. It was determined that within the riparian zone of the Kings River Overflow, 2 Goodding's black willow (*Salix gooddingii*), 5 valley oak (*Quercus lobata*) and 5 Fremont cottonwoods (*Populus fremontii*) will need to be removed as a result of the new bridge structure. In addition, 1 Western sycamore (*Platanus racemosa*), will need to be trimmed to allow equipment access into the construction easement. Of these trees, 3 of the cottonwoods are considered heritage trees ($\geq$ 25" Diameter at Breast Height (DBH)) and will be replanted at a 10:1 ratio. A site visit will be conducted prior to construction to determine if any additional trees in the work area have grown to $\geq$ 4" DBH, which is the minimum size necessary to be included in the replanting estimates. The results of that visit will determine if existing conditions have changed since the 2009 survey. The final bridge plans were used to calculate the area of impact to riparian habitat: 0.15 acres of riparian habitat will be affected.

Based on the recommended compensatory mitigation ratio of 3:1 for non-heritage trees (<25" DBH) and 10:1 for heritage trees, a total of 60 native riparian trees will be planted on the mitigation site. Assuming a minimum of 25' spacing between the plantings, 1.1 acres will be required to accommodate the 60 trees. The proposed site is located on the Connie Rae Hall property immediately north-west of the project site. The property provides approximately 20 acres of potential mitigation land. The Kings River Overflow channel bisects the property from north-east to south-west. Native riparian trees have been removed from large portions of the channel due to past agricultural cultivation.

Therefore the property provides opportunities to re-establish riparian forest habitat in the same waterway affected by the project. Caltrans is proposing to plant the following riparian trees: 6 Goodding's black willow, 3 Western sycamore, 15 valley oak, and 36 Fremont cottonwoods. Refer to Appendix B for a location map of the mitigation site and Appendix C for the landscape plan.

Should, for some unforeseen reason, the Connie Rae Hall property become unavailable or unsuitable for mitigation, other local properties are being considered for mitigation areas in conjunction with the SR 180 Corridor Project, Phases 2 and 3. This includes a 127-acre property approximately 1 mile west of the project site, which also includes substantial opportunities for riparian forest habitat enhancement.

## Goals

This Mitigation and Monitoring plan is designed to create approximately 1.1 acres of riparian forest habitat within the same watershed and as near the project site as practicable. The proposed mitigation will be established within 1 year of the completion of the project. As a result of construction activity on the project site, a period of short-term loss of riparian habitat will occur. However, the affected habitat will recover and provide for a variety of wildlife species commonly found utilizing riparian habitat of Fresno County.

This monitoring plan is designed to assess the mitigation site's habitat development from the time of construction until the project has met or exceeded the success criteria outlined in this plan. The quantitative and qualitative success criteria include percent survival, plant vigor, and height. The goals of the mitigation will be considered successful if 80% survival of riparian trees is obtained at the end of five years.

Eighty percent survival of the 60 native riparian trees at the end of the five-year monitoring period will be broken down by success of each species. Success (80% survival) at the end of the five-year monitoring period would include a total of 48 riparian trees: 5 Goodding's black willow, 2 Western sycamore, 12 valley oak, and 29 Fremont cottonwoods. The success criteria constitute the means by which the mitigation site's performance will be evaluated.

## Performance Criteria

The performance criteria that will be achieved by the end of each year following the initial plantings are identified below:

| **Performance Criteria** | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Percent Survival | 100 | 100 | 100 | >80 | 80 |

## Provisions

To achieve the success criteria, the following provisions will be followed:

- Planting will occur at the onset of the rainy season.
- Seedlings will be derived from local stock (similar elevation and climate zone as the project site, preferably from within eastern Fresno County).
- Irrigation will be provided for the first 3 years to insure plant establishment.
- If dead seedlings are found they will be replaced at a 1:1 ratio of the same species within a reasonable time period during the first 3 years of monitoring.
- Foliage protectors will be placed around each individual seedling to prevent herbivory from wildlife.
- A layer of mulch will be placed around each seedling to aid in weed control and moisture retention.
- Each seedling will receive proper fertilizing.
- Rodent control will be implemented if deemed necessary.

## Monitoring

Monitoring of the mitigation site is required by CDFG and is mandated by the National Environmental Policy Act and the California Environmental Quality Act. This mitigation and monitoring plan is to be implemented as compensation for impacts to riparian vegetation as a result of the Kings River Overflow Bridge Replacement project in Fresno County.

Monitoring by a Caltrans biologist will be conducted upon implementation of the planting. The monitor will establish permanent photography stations from which to photograph the mitigation sites during each subsequent visit. In addition, the monitor will conduct a manual count of each individual seedling while collecting global positioning system (GPS) data and designating a numerical identifier for each seedling.

The photography stations will be located as to gain the best overall view of each stand. The locations of each station will be indicated on a map of the sites for future reference. A baseline series of photographs will be taken after the initial planting then during each monitoring period thereafter to document the overall condition and document changes of

the plantings. Monitoring will occur annually in July or August for a period of five years, when the health of the seedlings can easily be distinguished.

During annual site visits, the following data will be recorded:

- Seedling #: An individual identifier will be given for each seedling planted.
- Vigor: An estimate will be made for the overall health of the plants, based on the best professional judgment of the Caltrans biologist. The monitor will record vigor as good, fair, poor, or dead. Vigor of seedlings should be compared to the surrounding riparian vegetation of the mitigation sites.
- Height: The height of each seedling will be recorded to determine if the seedlings are establishing themselves and to have a record of potential seedlings that will fail and be replaced by the contractor.
- DBH: Should the plantings become large enough during the monitoring period to collect DBH measurements, such measurements will be recorded.

## Survey Equipment

- Map of overall site location, plot locations, and photo point locations
- Data sheets, clipboard, pen or pencil
- Double sided measuring tape (DBH and feet)
- Wooden stakes for photography stations
- Flagging
- GPS unit (option: prepare data dictionary to enter data)
- Digital Camera
- Sharpie Pen

## Annual Reporting

An annual report shall be prepared and submitted by December 15 of each year. The report will discuss any corrective measures that were taken during that monitoring year. The report will evaluate and summarize the data for the current sampling session compared to the previous one. The report will specify if the goals are being achieved. A discussion of the potential problems and recommended corrective actions will also be presented. The first report will be submitted after the mitigation site has experienced one full growing season.

The report will be sent to:

California Department of Fish and Game
Region 4, Environmental Services Branch
1234 East Shaw Ave
Fresno, CA 93710

## Mitigation Completion

When the monitoring period is complete, Caltrans will notify CDFG to initiate a final inspection to verify that the success criteria have been met.

## Contingency Measures

The monitoring Caltrans biologist will review the results of the monitoring program annually. If after the first three years of monitoring and irrigating, the success criterion drops below 80% then Caltrans will re-evaluate the mitigation sites with the assistance of CDFG, the Caltrans Landscape Architect, and the Caltrans Resident Engineer to come up with remedial actions to ensure the success criteria will be met.

After reviewing the annual reports, CDFG may also provide suggestions for adjustments to the monitoring program. CDFG suggestions will be reviewed, and if feasible will be incorporated in to the following year monitoring program. The need for occasional adjustments to the monitoring and revegetation program is necessary for the success of the mitigation sites.

The results of monitoring will be conveyed to the Caltrans Landscape Architect, and Caltrans Resident Engineer, to allow them to factor the information into their ongoing maintenance program. For example, if the results of the monitoring indicate that the riparian trees are not able to survive without irrigation, it would be recommended that irrigation be continued beyond the three year plant establishment period.

Not only will annual reports be provided to those associated with the maintenance of the sites, but also if the monitoring Caltrans biologist notices significant problems related to site maintenance and performance then verbal reporting will be initiated to facilitate remediation.

## References

Wildlife Conservation Board (WCB). 2003. *California Riparian Habitat Conservation Program*. State of California. Accessed on July 24, 2007. http://www.wcb.ca.gov/Pages/california_riparian_habitat_conservation_program.html

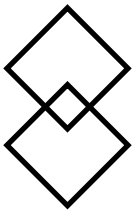
Schoenherr, A.A. 1992. *A Natural History of California*. University of California Press, Berkeley, Ca. 772 pp.

## Appendices

A: Streambed Alteration Agreement

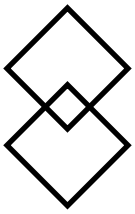
B: Mitigation Site Location Map

C: Landscape Plan

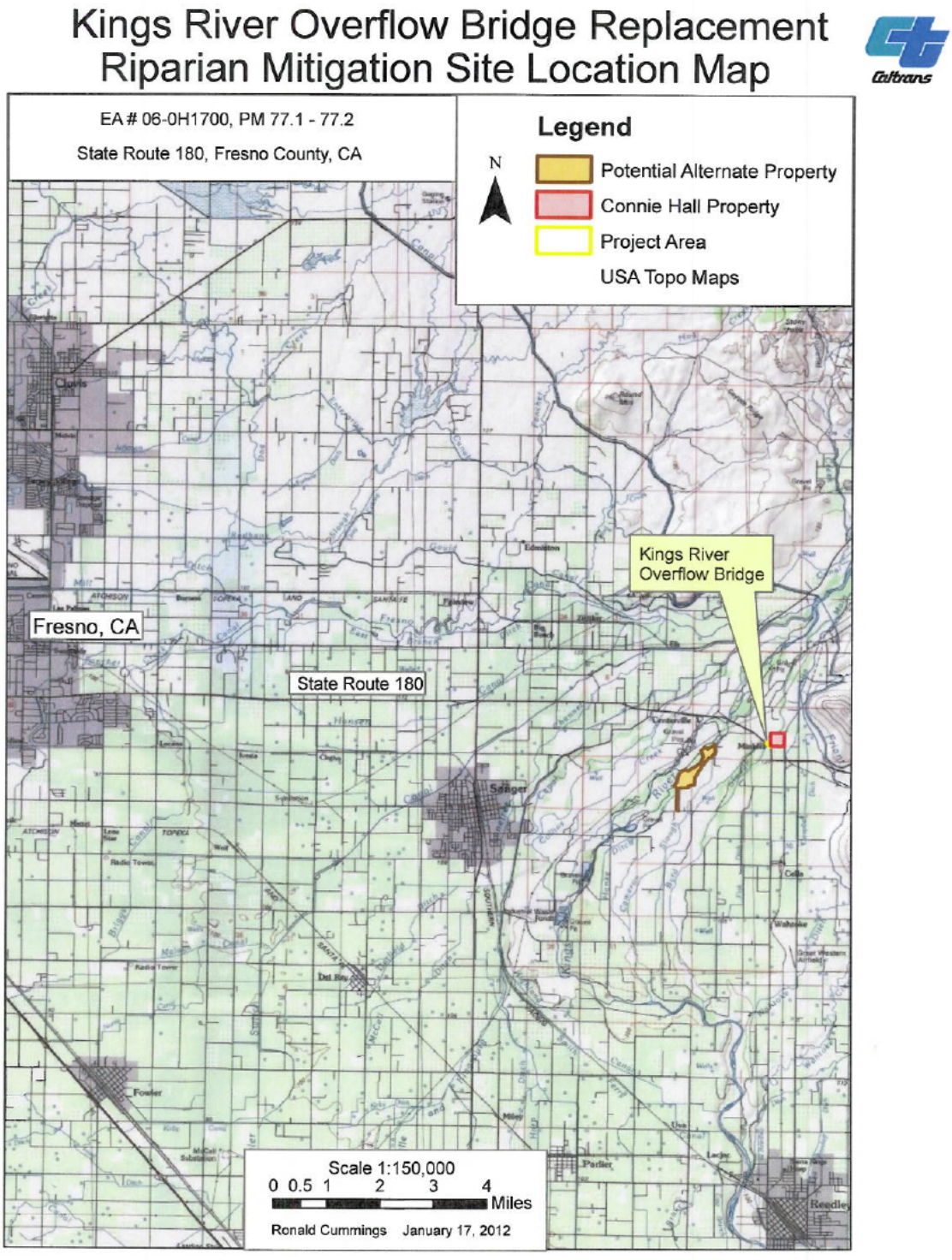


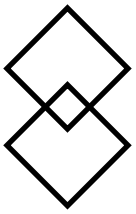
## APPENDIX A  Streambed Alteration Agreement Notification No. XXXX-XXXX-XXXX-XX

(Pending)

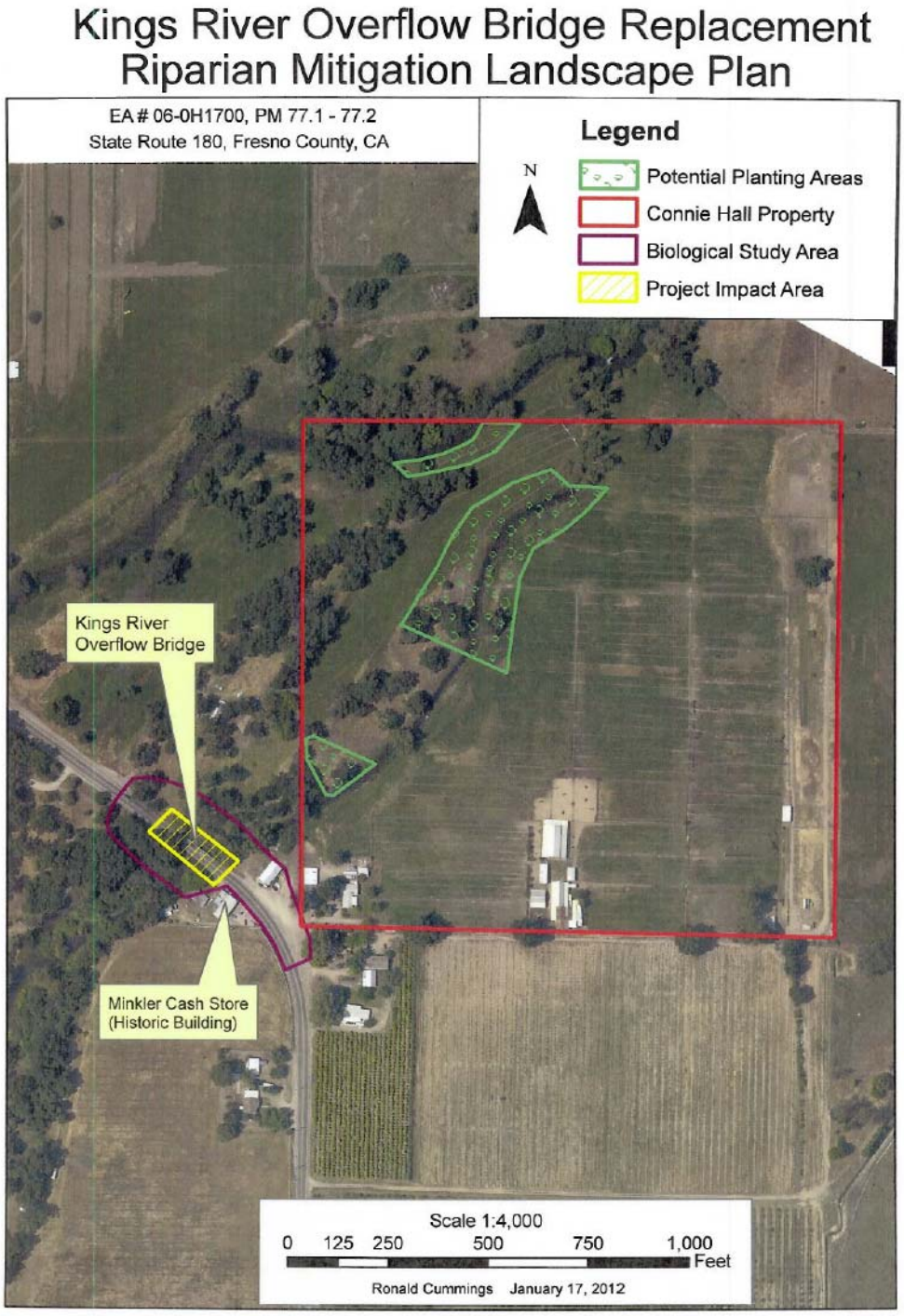


# APPENDIX B  Mitigation Site Location Map





# APPENDIX C  Landscape Plan



# Manning Avenue Bridge Replacement Project

## Natural Environment Study

On Manning Avenue in the City of Reedley at the Kings River
Fresno County

Bridge No. 42C-0010

06-FRE-CR
BHLS-5216 (028)

**March 2009**

Caltrans

# Natural Environment Study

City of Reedley, Fresno County, California

On Manning Avenue in the City of Reedley at the Kings River
06-FRE-CR
BHLS 5216 (028)

## March 2009

STATE OF CALIFORNIA
Department of Transportation

CITY OF REEDLEY


Prepared By: _____ Date: _____
City of Reedley
Department of Public Works
1733 9th Street
Reedley, CA 9 3654
Contact: Dana Ritschel
(559) 637-4200

Approved By: _____ Date: _____
Kelly Hobbs, Chief
(559) 243-8222
San Joaquin Environmental Management Branch
California Department of Transportation

# Summary

## S.1 Project Description

The Manning Avenue Bridge Replacement Project (proposed project) is located at Manning Avenue, in the City of Reedley (City), Fresno County, California. The City, in cooperation with the California Department of Transportation (Caltrans), proposes to rehabilitate or replace the Manning Avenue Bridge (Bridge No. 42C-0010) over the Kings River. The existing bridge is structurally deficient due to the poor deck condition. Construction is anticipated to begin in fall 2009 or 2010.

## S.2 Purpose and Need

The purpose of the proposed project is to rehabilitate or replace portions of the structurally deficient Manning Avenue Bridge or replace the entire structure, depending on the alternative selected, to improve public safety. The existing bridge is structurally deficient due to the poor deck condition, substandard bridge and approach guardrails, and cracks in the original bridge piers. The specific purposes of the proposed project are to:

- Improve pedestrian safety by increasing the separation width of pedestrians and vehicles.
- Improve bridge performance in the event of the maximum credible earthquake.
- Correct substandard superelevation on the west approach.
- Improve the aesthetics of the western gateway of the City.
- Reduce maintenance costs.
- Improve public safety by either rehabilitating or replacing the structurally deficient bridge.
- Improve water recreation by increasing the spans between bridge piers.

## S.3 Summary of Results and Impacts

Sensitive resources were identified through consultation with Caltrans, the California Department of Fish and Game (DFG), and the U.S. Fish and Wildlife Service (USFWS); a review of existing information; and field surveys conducted by Jones & Stokes biologists. The following sensitive resource issues were documented or identified as having the potential to occur in the study area and therefore could be affected by the proposed project.

### S.3.1 Waters of the United States

A total of 3.936 acres of potential waters of the United States was delineated in the study area. Approximately 0.57 acre of temporary fill and 0.01 acre of permanent fill of waters of the United States is anticipated during construction of the proposed project.

### S.3.2 Sensitive Natural Communities and Native Trees

Impacts on sensitive natural communities would include a permanent loss of approximately 0.13 acre of riparian woodland within the project footprint, including two valley oaks. Indirect impacts on approximately 2.33 acres of riparian woodland vegetation could occur from adjacent construction activity.

### S.3.3 Sensitive Species

The following conclusions have been reached regarding special-status species in the study area.

- No special-status plants occur in the project study area.
- Suitable habitat (elderberry shrubs) for valley elderberry longhorn beetle (VELB) occurs within the study area and could be affected directly by the removal of suitable habitat or indirectly by noise and dust related to construction activities. Although no exit holes were observed, there is a high potential for this species to occur within the study area, based on the proximity to known occurrences and the presence of the host plant for VELB. A Biological Assessment (BA) is being prepared for this species and will be submitted to USFWS for review.
- Moderately suitable habitat for western pond turtle occurs in the study area. Though pond turtles have not been reported to occur in the study area and high flows occurring during the summer months (also the pond turtle nesting season) may preclude nesting in the main channel, there is potential for pond turtles to use riparian areas higher upslope outside of the water flow area for nesting. During the non-breeding season flows within the main channel would not preclude western pond turtle. The amount of moderately suitable habitat that would be permanently removed would be small, other habitat impacts would be temporary, and measures would be implemented to limit disturbance to the Kings River. Therefore, the proposed project would not substantially affect western pond turtles (if they occur) in the project area. The mitigation measure described in Chapter 4 would be implemented to avoid or minimize impacts on western pond turtles. The avoidance and minimization efforts described for this species would further reduce the potential for impacts on western pond turtles.
- Manning Avenue Bridge contains occupied maternal bat roosting habitat. Furthermore, it is possible that it is used by day-roosting bats during the fall migration and winter hibernation seasons. Bridge replacement would require the removal of this habitat, which would necessitate the use of exclusion devices to avoid and minimize impacts on bat roosts and the implementation of on-site bat replacement habitat to compensate for the permanent loss of roosting habitat. Impacts on roosting bats would be indirect and temporary in nature because the new bridge would be retrofitted with bat replacement habitat of sufficient quantity (as

determined by DFG) to accommodate existing bat roosts. The avoidance and minimization efforts and compensation mitigation described for bat roosts would reduce impacts.

- Manning Avenue Bridge contains occupied swallow nesting habitat. Swallows could be affected by the proposed project if construction activities were to occur between March 1 and September 1 (the nesting season). Implementation of avoidance and minimization measures identified for swallows would ensure that the proposed project would not result in the loss or disturbance of swallow nests, eggs, or young.
- Nesting habitat for migratory birds, including raptors, occurs in the study area. Construction of the proposed project could affect nesting birds, including raptors, if construction were to remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in the death of young or loss of reproductive potential would violate the Migratory Bird Treaty Act (MBTA) and DFG codes 3503 and 3503.5. Implementation of avoidance and minimization measures identified for nesting migratory birds, including raptors, would ensure that the proposed project would not result in the loss or disturbance of migratory bird and raptor nests, eggs, or young.

### S.3.4 Invasive Plants

Invasive plant species were documented in the study area. The proposed project would temporarily create additional disturbed areas, but it would not increase the area currently subject to repeated disturbance. Measures would be implemented to avoid and minimize the potential introduction and spread of invasive plant species.

## S.4 Permit Requirements

The City would obtain and implement the conditions of the following permits:

- Endangered Species Act, Section 7: Consultation and Incidental Take Permit;
- Clean Water Act, Section 401: Water Quality Certification;
- Clean Water Act, Section 404: Placement of Fill;
- Land Use Agreement (lease); and
- California Fish and Game Code, Section 1602.

## S.5 Mitigation Agreements

As part of the proposed project, the City or its contractor would implement the following avoidance and minimization measures (abbreviated), which are described in Chapter 4. These measures have been identified based on natural resources present or with potential to occur in the study area and the potential impacts that could result from the proposed project.

- Install construction barrier fencing around the construction area to protect sensitive biological resources to be avoided (i.e., the Kings River, riverine wetland, native trees, elderberry shrubs, trees that support nests of special-status birds).
- Retain a biological monitor to conduct weekly visits during construction in or near the Kings River.
- Avoid and minimize potential indirect disturbance of riparian communities.
- Avoid and minimize potential indirect disturbance of the riverine wetland.
- Protect water quality and prevent erosion in the Kings River.
- Obtain required permits, authorizations, certifications, and agreements.
- Conduct a biological resources education program for construction crews.
- Fence elderberry shrubs to be protected.
- Inspect buffer area fences during construction.
- Water down construction areas to control dust in the vicinity of elderberry shrubs.
- Conduct preconstruction surveys for western pond turtle and construct exclusion fencing, if needed.
- Install bat exclusion devices in late August.
- Avoid construction activities that could disturb nesting swallows.
- Remove trees and shrubs during the nonbreeding season or conduct preconstruction nest surveys.
- Avoid the introduction and spread of invasive species.

# Table of Contents


**Page**

Table of Contents ..... i
List of Tables and Figures ..... iii
List of Abbreviated Terms ..... iv

**Summary** ..... S-1
S.1 Project Description ..... S-1
S.2 Purpose and Need ..... S-1
S.3 Summary of Results and Impacts ..... S-1
S.3.1 Waters of the United States ..... S-2
S.3.2 Sensitive Natural Communities and Native Trees ..... S-2
S.3.3 Sensitive Species ..... S-2
S.3.4 Invasive Plants ..... S-3
S.4 Permit Requirements ..... S-3
S.5 Mitigation Agreements ..... S-3
**Chapter 1** Introduction ..... 1-1
1.1 Project Background ..... 1-1
1.1.1 Purpose ..... 1-1
1.1.2 Need ..... 1-2
1.2 Project Description ..... 1-3
1.2.1 Build Alternatives ..... 1-3
1.2.2 Construction Phasing, Access, Staging, and Methods ..... 1-5
1.2.3 Project Schedule ..... 1-7
**Chapter 2** Study Methods ..... 2-1
2.1 Regulatory Requirements ..... 2-1
2.1.1 Endangered Species Act ..... 2-1
2.1.2 Migratory Bird Treaty Act ..... 2-1
2.1.3 Clean Water Act: Section 401 and Section 404 ..... 2-2
2.1.4 California Environmental Quality Act ..... 2-2
2.1.5 California Endangered Species Act ..... 2-3
2.1.6 California Fish and Game Code Section 1602 ..... 2-3
2.1.7 California Fish and Game Code Sections 3503 and 3503.5 ..... 2-3
2.1.8 Natural Community Conservation Planning Act ..... 2-3
2.1.9 California Native Plant Protection Act ..... 2-3
2.1.10 Porter-Cologne Water Quality Control Act ..... 2-4
2.2 Studies Required ..... 2-4
2.2.1 Prefield Investigation ..... 2-4
2.3 Personnel and Survey Dates ..... 2-5
2.3.1 Waters of the United States ..... 2-5
2.3.2 Botanical Resources ..... 2-5
2.3.3 Wildlife Resources ..... 2-5
2.3.4 Fisheries Resources ..... 2-6
2.3.5 Agency Coordination and Professional Contacts ..... 2-6
2.3.6 Federal ..... 2-6
2.3.7 State ..... 2-7
2.4 Limitations That May Influence Results ..... 2-8
**Chapter 3** Results: Environmental Setting ..... 3-1
3.1 Description of the Existing Biological and Physical Conditions ..... 3-1
3.1.1 Study Area ..... 3-1
3.1.2 Physical Conditions ..... 3-1
3.1.3 Biological Conditions in the Biological Study Area ..... 3-1

3.1.4 Invasive Plant Species ..... 3-5
3.2 Regional Species and Habitats of Concern ..... 3-6
Chapter 4 Results: Biological Resources, Discussion of Impacts, and Mitigation ..... 4-1
4.1 Sensitive Species Potentially in the Study Area ..... 4-1
4.2 Natural Communities of Special Concern ..... 4-1
4.2.1 Riparian Forest ..... 4-1
4.2.2 Riverine Wetland ..... 4-4
4.2.3 Open Water ..... 4-5
4.3 Special-Status Plant Species ..... 4-8
4.4 Special-Status Animal Species Occurrences ..... 4-8
4.4.1 Valley Elderberry Longhorn Beetle ..... 4-9
4.4.2 Western Pond Turtle ..... 4-16
4.4.3 White-Tailed Kite, Swainson's Hawk, and Non-Sensitive Nesting Migratory Birds, Including Raptors ..... 4-17
4.4.4 Swallows ..... 4-19
4.4.5 Roosting Bats ..... 4-21
4.5 Other Biological Issues ..... 4-26
4.5.1 Invasive Species ..... 4-26
Chapter 5 Results: Permits and Technical Studies for Special Laws or Conditions ..... 5-1
5.1 Regulatory Requirements ..... 5-1
5.2 Federal Endangered Species Act Consultation Summary ..... 5-1
5.3 California Endangered Species Act Consultation Summary ..... 5-2
5.4 Wetlands and Other Waters Coordination Summary ..... 5-2
5.5 Federal Fisheries and Essential Fish Habitat ..... 5-2
Chapter 6 References Cited ..... 6-1
6.1 Printed References ..... 6-1

Appendix A California Natural Diversity Database Records Search
Appendix B U.S. Fish and Wildlife Service List of Endangered and Threatened Species that May Occur in the Project Area
Appendix C Manning Avenue Bridge Replacement Project Delineation of Waters of the United States
Appendix D List of Plant Species Observed in the Study Area
Appendix E List of Wildlife Species Observed in the Study Area

# List of Tables and Figures


| | | On Page |
|---|---|---|
| Table 3-1 | Total Area of Natural Communities in the Study Area | 3-2 |
| Table 3-2 | Invasive Plant Species Located in the Study Area | 3-6 |
| Table 3-3 | Special-Status Plant Species with Potential to Occur in the Manning Avenue Bridge Replacement Project Area | follows page 3-6 |
| Table 3-4 | Special-Status Wildlife Species with Potential to Occur in the Manning Avenue Bridge Replacement Project Area | follows page 3-6 |
| Table 3-5 | Native Trees Located in the Study Area | 3-8 |
| Table 4-1 | Direct Impacts on the Kings River in the Study Area | 4-7 |
| Table 4-2 | Results of the Valley Elderberry Longhorn Beetle Survey within Direct Impact Area | 4-10 |
| Table 4-3 | Results of the Valley Elderberry Longhorn Beetle Survey within Potential Indirect Impact Area (within 100 feet of project construction activities) | 4-11 |
| Table 4-4 | Type of Impact on Elderberry Shrubs within and adjacent to the Study Area | 4-14 |
| Table 4-5 | Required Compensation for VELB | 4-15 |
| Table 5-1 | Permits and Approvals Potentially Required for the Proposed Project | 5-1 |

| | | Follows Page |
|---|---|---|
| Figure 1-1 | Project Location | 1-2 |
| Figure 1-2a–d | Proposed Project Full Bridge Replacement | 1-4 |
| Figure 1-3 | Project Alternative Partial Bridge Replacement and Rehabilitation | 1-4 |
| Figure 3-1 | Natural Communities and Impact Areas | 3-2 |
| Figure 3-2 | Native Trees and Elderberry Shrubs in the Study Area | 3-8 |

# List of Abbreviated Terms

| | |
|---|---|
| BA | Biological Assessment |
| BDS | Caltrans Bridge Design Specifications |
| BMPs | best management practices |
| Cal-IPC | California Invasive Plant Council |
| Caltrans | California Department of Transportation |
| CCR | California Code of Regulations |
| CDFA | California Department of Food and Agriculture |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CFR | Code of Federal Regulations |
| CIDH | cast-in-drilled-hole |
| CISS | cast-in-steel-shell |
| City | City of Reedley |
| CNDDB | California Natural Diversity Database |
| CNPPA | California Native Plant Protection Act |
| CNPS | California Native Plant Society |
| Corps | U.S. Army Corps of Engineers |
| CWA | Clean Water Act |
| DFG | California Department of Fish and Game |
| EO | Executive Order |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FHWA | Federal Highway Administration |
| FR | Federal Register |
| HBRRP | Highway Bridge Replacement and Rehabilitation Program |
| kHz | kilohertz |
| MBTA | Migratory Bird Treaty Act |
| MOU | Memorandum of Understanding |
| NEPA | National Environmental Policy Act |
| NES | Natural Environment Study |
| NMFS | National Marine Fisheries Service |
| OHWM | ordinary high-water mark |
| PDT | Project Development Team |
| Porter-Cologne Act | Porter-Cologne Water Quality Control Act |
| proposed project | Manning Avenue Bridge Replacement Project |
| PVC | polyvinyl chloride |
| RWQCB | Regional Water Quality Control Board |
| SAA | Streambed Alteration Agreement |
| SLC | State Lands Commission |
| SR | State Route |
| SWPPP | Stormwater Pollution Prevention Plan |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| VELB | valley elderberry longhorn beetle |
| WDRs | waste discharge charges |

# Chapter 1 Introduction

This Natural Environment Study (NES) report was prepared for the Manning Avenue Bridge Replacement Project (proposed project) on Manning Avenue in the City of Reedley (City), Fresno County, California. The City, in cooperation with the California Department of Transportation (Caltrans), proposes to rehabilitate or replace the Manning Avenue Bridge (Bridge No. 42C-0010) over the Kings River. The existing bridge is structurally deficient due to the poor deck condition. The project location map is provided as Figure 1-1.

This report is intended to support the preparation of National Environmental Policy Act (NEPA) documentation for Caltrans, the NEPA lead agency through delegation of NEPA authority by the Federal Highway Administration (FHWA), and preparation of California Environmental Quality Act (CEQA) documentation for the City, the CEQA lead agency. This report also supports efforts to obtain the agreements, permits, and concurrence needed for the proposed project. The federal Highway Bridge Program (HBP), formerly the Highway Bridge Replacement and Rehabilitation Program will provide 88.5% of the right-of-way and construction funding to replace the original 1929 portion of the bridge and the 1952 portion, and the City will provide the remaining 11.5% of funding. For replacement of the 1974 structure, the City will provide 100% of the funding.

## 1.1 Project Background

The existing reinforced concrete T-beam bridge was originally constructed in 1929 and has been subsequently widened twice to the south (downstream). The first widening occurred in 1952 and consisted of constructing several additional reinforced T-beam girders to provide 13 feet 6 inches of additional bridge width. The second widening occurred in 1974 and provided an additional 50 feet 6 inches of bridge width to increase traffic capacity on Manning Avenue, upgrading it from a two- to a four-lane arterial (Quincy Engineering 2007). In 1974, a total of 240 feet of the 1952 portion of the bridge was removed from the west end, resulting in the current bridge length of 440 feet.

### 1.1.1 Purpose

The purpose of the proposed project is to rehabilitate or replace portions of the structurally deficient Manning Avenue Bridge or replace the entire structure, depending on the alternative selected, to improve public safety. According to FHWA, a deficient bridge is not necessarily unsafe or one that requires special posting for speed or weight limitations. However, it may require significant maintenance and rehabilitation, even replacement. Some of these bridges may be posted and require trucks over a certain weight to take a longer route. The existing bridge is structurally deficient due to the poor deck condition, substandard bridge and approach guardrails, and cracks in the original bridge piers.

The specific purposes of the proposed project are to:

- Improve pedestrian safety by increasing the separation width of pedestrians and vehicles.

- Improve bridge performance in the event of the maximum credible earthquake.
- Correct substandard superelevation on the west approach.
- Improve the aesthetics of the western gateway of the City.
- Reduce maintenance costs.
- Improve public safety by either rehabilitating or replacing the structurally deficient bridge.
- Improve water recreation by increasing the spans between bridge piers.

### 1.1.2 Need

According to the *Seismic Strategy and Bridge Rehabilitation Report* prepared for the proposed project by Cornerstone Engineering in 2006 and the Caltrans *Bridge Inspection Report* in 2004 (Quincy Engineering 2007), the original 1929 structure and the widened 1952 structure require replacement, while the 1974 portion of the bridge structure requires several rehabilitation measures to address existing deficiencies and improve sufficiency ratings as well as a seismic retrofit. According to FHWA, structurally deficient bridges require immediate rehabilitation to remain open, are restricted to light vehicles, or are closed. Functionally obsolete bridges are those with deck geometry (i.e., lane widths), load carrying capacity, clearance, or approach roadway alignment that no longer meets the criteria for the system of which the bridge is a part.

#### *1.1.2.1 Deficiencies of Existing Bridge*

The latest Caltrans maintenance report for the bridge identified damage to the asphalt concrete deck, railing, and piers as well as scour, causing the upstream ends of some piers to be exposed and undermined. According to the draft feasibility study prepared for the proposed project, the existing bridge is structurally deficient due to the deteriorating deck condition. The existing bridge rails are substandard, and an approach guardrail is not present, which raises safety concerns (Quincy Engineering 2007). The western approach also has substandard superelevation.

The widened 1974 structure has a different span length and superstructure type and is separated from the widened 1952 structure and the original structure by a 0.5-inch longitudinal expansion joint, which causes these portions of the bridge to act as two separate structures. Consequently, the two structures are evaluated separately.

The underside of all spans in the original 1929 portion and widened 1952 portion have multiple moderate-to-severe cracks and brown leachate, which indicates significant water intrusion and subsequent corrosion of the deck reinforcing steel. There are moderate-to-severe vertical cracks in various locations in all of the original piers. The original piers are supported on timber piles, the current condition of which are unknown.

The 1974 structure is supported on driven piles filled with reinforced concrete. The elevation of the top of the piles for the 1974 structure is about 11 feet below that of the original and 1952 structures, making the older piles more vulnerable to scouring than the 1974 piles. For this reason, it is assumed that rehabilitation and/or retrofit of the original and 1952 structures would not be cost effective and that the proposed project would include their replacement.


06540.06 BA (10-07)

**Figure 1**
**Project Location**

#### *1.1.2.2 Seismic Inadequacies*

Any alternative that leaves any portion of the existing bridge structure in place requires an evaluation of the structure for seismic endurance and subsequent retrofitting, as appropriate. This evaluation is included in the *Seismic Strategy and Bridge Replacement Report* prepared by Cornerstone Structural Engineering Group (2006). A new structure of any configuration would need to be designed to meet the current seismic design criteria specified by Caltrans Bridge Design Specifications (BDS).

## 1.2 Project Description

The study area is approximately 11 miles east of State Route (SR) 99, extending from Kings River Road on the west side of the Kings River to approximately 350 feet from the intersection of Manning Avenue and West Upper Bridge Avenue (see Figure 1-1). The current bridge configuration is 440 feet long by 89 feet 4 inches wide, with spans that range from 40 to 80 feet. It is supported by cast-in-place concrete pierwalls. The project area is approximately 2,275 feet long, including roadway realignments to match the improved bridge. Manning Avenue is a major arterial with an average operating speed of 55 miles per hour (mph) west of the project and an arterial with an operating speed of 45 mph east of the project. The roadway and bridge have two traffic lanes in each direction (Quincy Engineering 2007) and a raised median. The Kings River flows to the south in the project area, and the developed areas along the river focus on river recreation and riverfront residential uses. In the immediate project area, Kelley's Beach offers river access and camping. To the east of the project area is the downtown area of the City.

### 1.2.1 Build Alternatives

This section describes the alternatives developed by the Project Development Team (PDT), composed of representatives from the City of Reedley and Caltrans and technical consultants to achieve the project purpose and need while avoiding or minimizing environmental impacts. Two build alternatives are presented below (proposed project and project alternative), along with a No-Build Alternative. As stated above, because it is not viable or economical to rehabilitate the original 1929 structure and the 1952 widened structure, the alternatives are presented with the assumption that these structures will be replaced. The project alternative is analyzed at a lesser level of detail but is considered a viable build alternative.

#### *1.2.1.1 Proposed Project—Full Bridge Replacement*

The proposed project would realign Manning Avenue to the north (see Figure 1-2a, b, c, and d) and construct a new bridge in two stages that would be joined with a closure pour. Traffic would be shifted south to the 1974 structure while the original 1929 structure and the 1952 structure were removed for construction of the new northern replacement portion. Traffic would then be shifted north onto the newly constructed portion while the existing 1974 structure would be removed. Once the entire existing structure is removed, the second portion of the replacement structure would be constructed and joined to the new north structure with a closure pour. The new structure would be a three-span parabolic haunched, cast-in-place, prestressed concrete box girder. Supports would likely be large-diameter cast-in-drilled-hole (CIDH) or cast-in-steel-shell (CISS) concrete piles at the piers, with pile footings at the abutments. All 10 original concrete

pierwall foundations would be removed and replaced with two pier locations within the Kings River channel.

The advantages of this alternative include minimal maintenance costs and efforts by the City for approximately the next 75 years, avoidance of rehabilitation or retrofit of the existing structures, aesthetic benefits due to removal of all existing foundations, and more open river access for watercraft and recreation due to longer spans and reduced foundations.

The disadvantages of this alternative include acquisition of additional rights-of-way, more initial construction and right-of-way costs than partial bridge replacement and rehabilitation (the project alternative, below), and longer construction time and staging interruption.

The proposed project offers the best balance between economy, function, and safety and therefore has been selected as the preferred alternative.

#### *1.2.1.2 Project Alternative—Partial Bridge Replacement and Rehabilitation*

Under the project alternative, the original 1929 structure and the 1952 structure would be removed and replaced with a newly constructed cast-in-place, prestressed, concrete box girder structure upstream and to the north. The existing 1974 portion of the bridge would be rehabilitated and retrofitted (see Figure 1-3 for the footprint of the alternative).

Key rehabilitation actions would include:

- Upgrading the existing barrier rails and lighting on the bridge.
- Possible removal of the existing piles from the original 1929 structure and the 1952 structure to install the new replacement foundations.
- Construction of a new large-diameter piles for the replacement bridge supports.
- Provision of scour protection at the existing piers, which includes placement of rock slope protection around the existing footing to the approximate scour depth.
- Completion of minor concrete repairs at the piers.

The advantages of this alternative include reduced construction time and cost, reduced roadway alignment and right-of-way acquisition, and allowance for roadway curve and superelevation improvements.

The disadvantages of this alternative include the lack of aesthetic improvements and pedestrian access due to the remaining 1974 structure, the lack of hydrologic improvements due to the presence of multiple existing piers in the river, the need to retrofit and rehabilitate the 1974 structure, heightened lifetime cost and eventual future replacement of the 1974 structure, and the remaining deficiencies associated with conforming to the existing 1974 portion of the bridge.

#### *1.2.1.3 No-Build (No-Action) Alternative*

Under the no-build (no-action) alternative, necessary improvements and rehabilitation to the Manning Avenue Bridge would not be implemented, thus requiring continued maintenance of the existing structurally deficient and seismically unsound bridge. Increased growth in the City

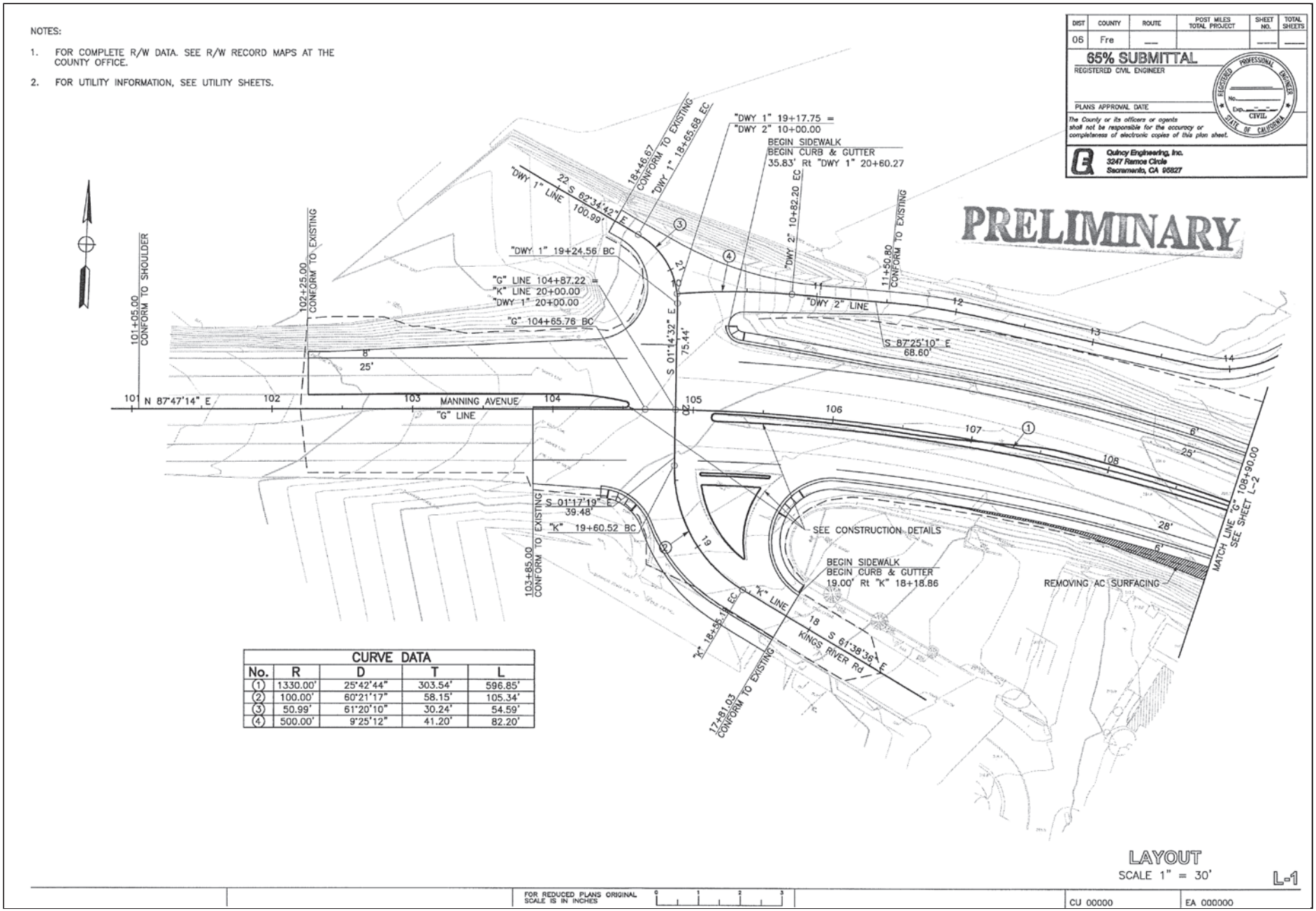



**Figure 1-2a**
**Proposed Project**
**Full Bridge Replacement**

NOTES:

1. FOR COMPLETE R/W DATA, SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | ___ | | ___ | ___ |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

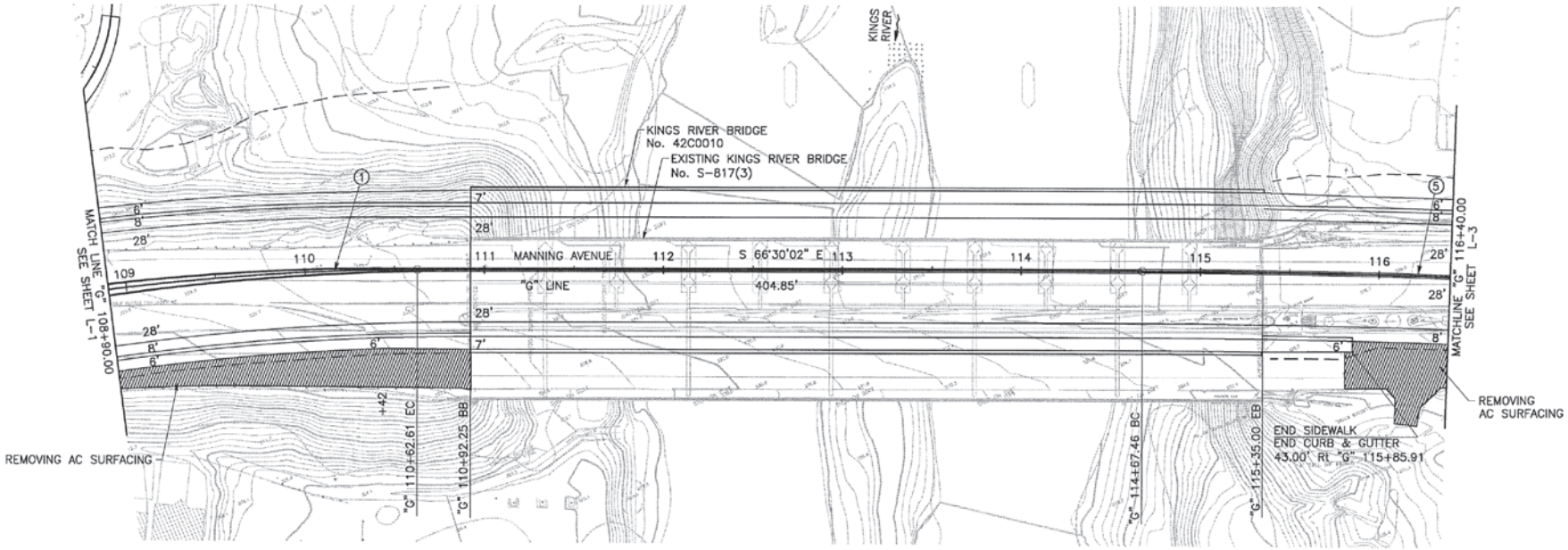
PLANS APPROVAL DATE

The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

RECORDED PROFESSIONAL ENGINEER No. ___ Exp. __-__-__ CIVIL STATE OF CALIFORNIA

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




| CURVE DATA | | | | |
|---|---|---|---|---|
| No. | R | D | T | L |
| ① | 1330.00' | 25°42'44" | 303.54' | 596.85' |
| ⑤ | 5000.16' | 2°38'58" | 115.63' | 231.22' |

LAYOUT

SCALE 1" = 30'

L-2

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 | EA 000000

06540.06 001 (08-07)

**Figure 1-2b**
**Proposed Project**
**Full Bridge Replacement**

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | — | | — | — |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

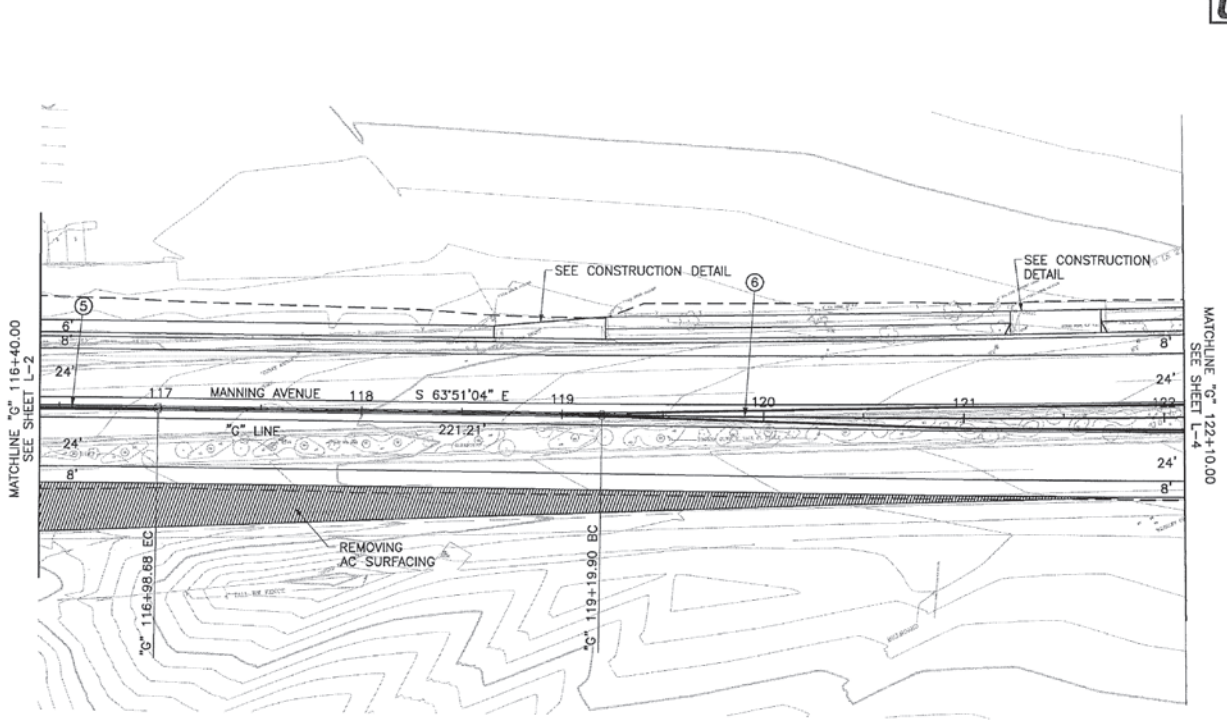
PLANS APPROVAL DATE

The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




| CURVE DATA | | | | |
|---|---|---|---|---|
| No. | R | D | T | L |
| ⑤ | 5000.16' | 2°38'58" | 115.63' | 231.22' |
| ⑥ | 11200.00' | 2°38'58" | 259.01' | 517.92' |

LAYOUT
SCALE 1" = 30'

L-3

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 | EA 000000

06540.06 001 (08-07)

**Figure 1-2c**
**Proposed Project**
**Full Bridge Replacement**

NOTES:

1. FOR COMPLETE R/W DATA. SEE R/W RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | ___ | | ___ | ___ |

65% SUBMITTAL

REGISTERED CIVIL ENGINEER

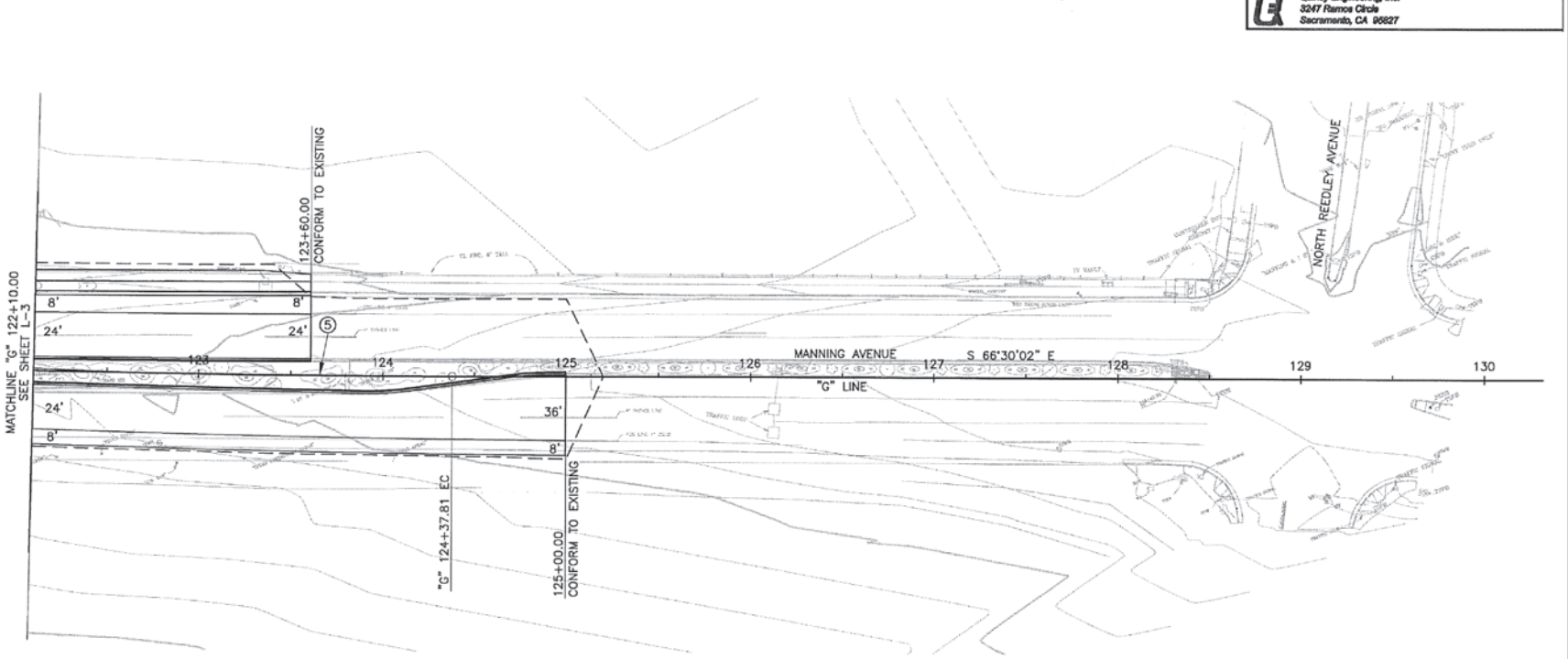
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

The County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

Quincy Engineering, Inc.
3247 Ramos Circle
Sacramento, CA 95827

PRELIMINARY




| CURVE DATA | | | | |
|---|---|---|---|---|
| No. | R | D | T | L |
| ⑤ | 11200.00' | 2°38'58" | 259.01' | 517.92' |

LAYOUT
SCALE 1" = 30'

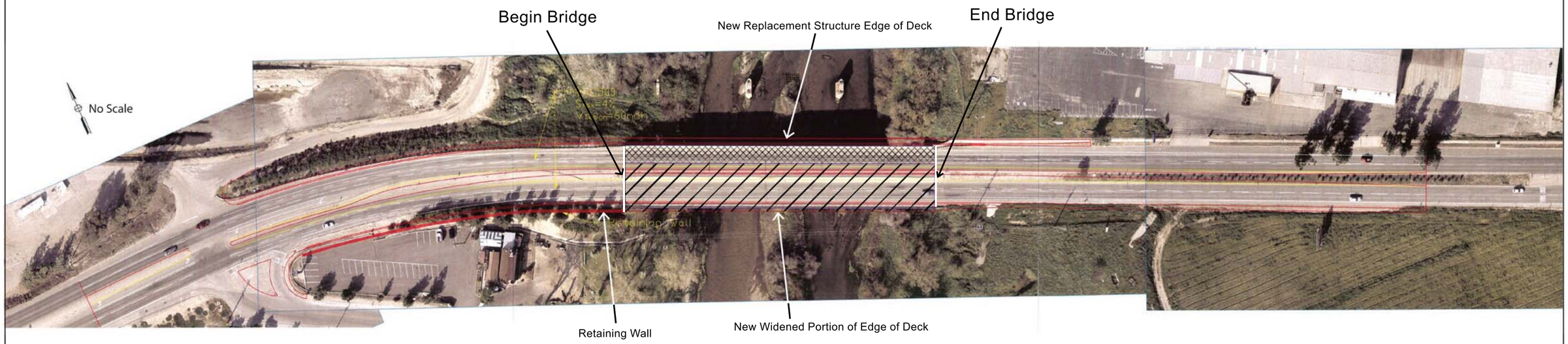
L-4

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

06540.06 001 (08-07)

**Figure 1-2d**
**Proposed Project**
**Full Bridge Replacement**




Legend

Portion of Existing Bridge to be Replaced

Portion of Existing Structure to be Rehabilitated and Widened

06540.06 001 Neg Dec (08-07)

**Figure 1-3**
**Project Alternative**
**Partial Bridge Replacement and Rehabilitation**

would continue to place increased traffic and pedestrian demands on the existing, substandard shoulders and nonexistent sidewalks of the bridge, which poses a safety hazards to users. Given the structurally deficient and seismically unsound status of the existing Manning Avenue Bridge, coupled with its age and scour vulnerabilities, portions of the structure are nearing the end of its service life. Extensive rehabilitation or replacement is required at this time. The no-build/no-action alternative does not meet the proposed project's purpose and need.

### 1.2.2 Construction Phasing, Access, Staging, and Methods

Regardless of which project build alternative is selected, the following phasing, access, staging, and construction methods would apply.

#### *1.2.2.1 Project Phasing*

Construction of the project could span two to three construction seasons. It is anticipated that construction activities would commence in fall of 2009 or 2010 and may conclude in late spring of 2010 or 2011 (the project may result in approximately 20 months of construction, or more).

The State Reclamation Board allows construction activities in the Kings River between mid-July and the end of October. However, large discharges from Pine Flat Dam occur during the irrigation months, starting in June, and generally decline at the beginning of September. Large stormflow discharges also occur during winter. Construction of falsework and substructure is planned for September when discharge is low, and construction of superstructure is expected to proceed in December and end in June (the start of the irrigation season).

Construction would also be timed, as much as possible, to coincide with avoidance windows for nesting swallows and other birds as well as roosting bats. Upland construction efforts would be concentrated between August 1 and March 1, as feasible. Vegetation removal for staging areas and construction work would occur between the middle of August and the end of February, and measures to exclude roosting bats from construction areas would be implemented between mid-February and mid-April.

The project would likely be constructed in two major stages. The first stage would require traffic to be realigned south on the existing bridge. This stage would require the closure of one westbound traffic lane, resulting in a total of three traffic lanes (two eastbound and one westbound) with provisions for reversing traffic flow in the middle lane, if needed. The northernmost 40 feet of the existing bridge would be removed while traffic remained on the existing southern portion. A new three-span, cast-in-place, prestressed concrete box girder bridge would then be constructed to the north of the existing structure. This structure would be approximately 60 feet in total width. This stage is anticipated to take 10 months, or more, to complete.

During the second stage, traffic would be realigned toward the north and would travel over the new bridge structure. During this stage, a total of four traffic lanes would be open (two eastbound and two westbound), resulting in no loss of traffic capacity over the current configuration. All remaining portions of the existing bridge would be removed (approximately 50 feet) while traffic continued to the north. The project would conclude with the construction of a second cast-in-place, prestressed concrete box girder bridge with a span configuration

identical to the new northern structure. The second-stage structure would be approximately 30 feet wide and would be connected to the northern structure with a closure pour. This stage is anticipated to take 10 months, or more, to complete.

#### 1.2.2.2 Project Access and Staging Areas

To allow equipment to access the project site, vegetation would be removed within the footprint of the proposed bridge, and temporary access roads would be constructed. Equipment staging would likely occur in the northwest quadrant of the project area because it is the largest flat area adjacent to the project; it also allows for good river access. The staging location may have to shift during the second stage of construction, however. Ideally, staging areas would allow the contractor to access the project site without having to cross lanes of traffic. Should the contractor wish to store equipment to the south of the bridge during the second stage of construction, the contractor may negotiate with the property owner in the southeast quadrant of the project area. This location provides good access to the project area and would result in a lesser impact on Kelly's Beach. These temporary staging areas would be reclaimed to conditions equivalent to existing conditions after project construction has been completed.

#### 1.2.2.3 Anticipated Construction Equipment

Typical construction equipment in the river channel would include the following:

- Backhoes and dump trucks would be used for excavation at the abutments, and lighter equipment would be used for backfill compaction.
- For the construction of CIDH and CISS pilings, a 150-ton drilling machine would be used, and the excavated material would be hauled away by dump trucks. A driving hammer attachment would be used as well as baker tanks to store and recirculate slurry. Concrete trucks would be used to place concrete in the drilled holes.
- Falsework could consist of steel piles that would be set by using a pile drive hammer mounted to a crane. Falsework construction typically requires a crane, forklift, and earth-moving equipment (i.e., backhoe or grader).
- Superstructure construction would require the use of cranes and concrete pumps. Superstructure construction would also require construction vehicles to have access to the riverbed.
- Superstructure prestressing would require hydraulic jacks for post-tensioning.

The majority of the construction noise related to this project would occur when the existing bridge is removed and during pile driving. This operation would likely include noise from concrete hammers/breakers and would be likely to occur during a 4-week period in each stage of construction, for a total of 8 weeks.

#### 1.2.2.4 Bridge Removal

To remove the existing bridge, the bridge deck could be cut with a saw at the piers and longitudinally between the girders. Cranes could then lift the entire girder section out with the composite tributary bridge deck attached. Once the larger girder sections are placed on the ground, they could be hauled off in large segments or broken up on-site and removed in several pieces. Once the superstructure is removed, the piers would be broken into pieces with

demolition hammers and removed from the site. The existing pile foundations would be removed to 1 foot below the original ground level and remain in place. This method is also anticipated for the existing upstream railroad bridge piers and piles.

#### *1.2.2.5 Stream Diversion*

It is anticipated that stream diversion through the project site would be required for the project. Fill and culverts may be used to divert the stream around the project site for the installation of new foundations and removal of existing foundations. The contractor may take advantage of the natural island in the middle of the river, simply widening it to install the new foundations. This may be accomplished through the use of temporary gravel barges or stringers that could be placed across the river flow so that equipment could be driven across.

If it is determined that a cofferdam is required for the proposed project, construction would occur upstream of the project (on the north side of bridge). Water could be diverted through the work site using corrugated metal pipes, then discharged downstream.

#### *1.2.2.6 Foundation Installation*

New bridge supports would consist of large-diameter CIDH concrete piles. There would be approximately three piles per pier, for a total of six foundations within the river channel. These supports would be 8 feet in diameter and approximately 95 feet deep. A large auger would be mounted on a 100- to 150-ton crane, and the pile would be drilled to the tip elevation. A steel rebar cage would then be placed in the hole, which would be filled with concrete. The area of disturbance would be limited to the areas immediately adjacent to the hole.

#### *1.2.2.7 Bridge Lighting*

Temporary light plants may be installed during construction to allow work to occur at night. Three to four permanent electroliers would be installed to light the roadway on the bridge. No electroliers are currently installed on the bridge.

### 1.2.3 Project Schedule

Construction of the project could span two to three construction seasons. It is anticipated that construction activities would commence in fall of 2009 or 2010 and may conclude in late spring of 2010 or 2011 (the project may result in approximately 20 months of construction).

# Chapter 2 Study Methods

## 2.1 Regulatory Requirements

This section describes the federal, state, and local plans, policies, and laws that are relevant to biological resources in the proposed project area. A list of applicable federal, state, and local permits and approvals that could be required before construction of the proposed project is provided in Chapter 5.

### 2.1.1 Endangered Species Act

The Endangered Species Act (ESA) of 1973, and subsequent amendments, provides regulation for the conservation of endangered and threatened species and the ecosystems on which they depend. The U.S. Fish and Wildlife Service (USFWS) (with jurisdiction over plants, wildlife, and resident fish) and the National Marine Fisheries Service (NMFS) (with jurisdiction over anadromous fish and marine fish and mammals) oversee the ESA.

Section 7 of the ESA mandates that all federal agencies consult with USFWS and NMFS if they determine that a proposed project may affect a listed species or its habitat. The purpose of consultation with USFWS and NMFS is to ensure that the federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. Section 7 consultation for valley elderberry longhorn beetle (VELB), a threatened species (federal list), would be required due to the presence of elderberry shrubs within and adjacent to the study area.

Section 9 of the ESA prohibits the take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. Take is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

### 2.1.2 Migratory Bird Treaty Act

Executive Order (EO) 13186 (signed January 10, 2001) directs each federal agency taking actions that would have, or would likely have, a negative impact on migratory bird populations to work with USFWS to develop a Memorandum of Understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA); it does not constitute any legal authorization to take migratory birds. Take, under the MBTA, is defined as an action or attempt to pursue, hunt, shoot, capture, collect, or kill (Title 50, Code of Federal Regulations [CFR], Section 10.12). The definition includes "intentional" take (take that is the purpose of the activity in question) and "unintentional" take (take that results from, but is not the purpose of, the activity in question). The discussion of nesting migratory birds in Chapter 4 describes potential project impacts on migratory birds and mitigation measures to avoid impacts on those species.

### 2.1.3 Clean Water Act: Section 401 and Section 404

Clean Water Act (CWA), Section 401, requires that applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States to obtain certification from the state in which the discharge would originate or, if appropriate, the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) must also comply with CWA Section 401.

After the California Environmental Quality Act (CEQA) process is complete, the project sponsor would apply for water quality certification from the Regional Water Quality Control Board (RWQCB) to comply with CWA Section 401. The U.S. Army Corps of Engineers (Corps) would require compliance with Section 401 as a prerequisite to authorization of the project under Section 404.

The Corps and the U.S. Environmental Protection Agency (EPA) regulate the placement of fill into waters of the United States under CWA Section 404. Waters of the United States include lakes, rivers, streams and their tributaries, and wetlands. Wetlands are defined for regulatory purposes as areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3).

The project proponent (City of Reedley) must obtain a permit from the Corps for all discharges of fill material into waters of the United States, including wetlands, before proceeding with the proposed project.

### 2.1.4 California Environmental Quality Act

CEQA defines a significant effect on the environment as a substantial or potentially substantial adverse change in the physical conditions within the area affected by the project. It is the policy

of the state to prevent the elimination of fish or wildlife species due to human activities and ensure that these species do not decline below self-perpetuating levels in order to preserve them for future generations.

### 2.1.5 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is on the federal and state lists, compliance with ESA satisfies CESA if the California Department of Fish and Game (DFG) determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only state listed, the project proponent must apply for a take permit under Section 2081(b). One state-listed species, Swainson's hawk, has the potential to occur in the study area. Avoidance and minimization measures described in Chapter 4 would avoid potential impacts on this species.

### 2.1.6 California Fish and Game Code Section 1602

Under this section of the California Fish and Game Code, agencies are required to notify DFG before any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, DFG is required to propose reasonable changes to the project to protect the resource. These modifications are formalized in a Streambed Alteration Agreement, which becomes part of the plans, specifications, and bid documents for the project.

### 2.1.7 California Fish and Game Code Sections 3503 and 3503.5

Under these sections of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird or to take, possess, or destroy any birds of prey or their nest or eggs. Birds of prey and other migratory bird nests were observed in the proposed project area.

### 2.1.8 Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act provides long-term protection of species and habitats through regional multi-species planning before special measures of the CESA become necessary.

### 2.1.9 California Native Plant Protection Act

The California Native Plan Protection Act preserves, protects, and enhances endangered native plants in California. The act gave the California Fish and Game Commission the power to

designate native plants as endangered, threatened, or rare and require permits for collecting, transporting, or selling such plants.

### 2.1.10 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) authorizes the State Water Resources Control Board to regulate state water quality and protect beneficial uses. Under the Porter-Cologne Act definition, waters of the state are "any surface water or groundwater, including saline waters, within the boundaries of the state." Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. If the Corps determines that a wetland is not subject to regulation under Section 404, CWA Section 401 water quality certification is not required. However, the RWQCB may impose waste discharge requirements (WDRs) if fill material is placed into waters of the state.

## 2.2 Studies Required

Potential biological resource issues associated with the proposed project were identified through review of existing information and field surveys. It was determined that the studies below would be required to document natural resources in the study area (defined as the project construction area, as shown in Figure 1-2, including the bridge span, approaches, and staging areas):

- Botanical field survey to identify plant communities, occurrences of sensitive plant species, and noxious weed infestations.
- General habitat evaluation to determine whether suitable habitat exists for sensitive animal species.
- Delineation of waters of the United States.

The following methods were used to identify natural resources in the study area: a prefield investigation, field surveys, and coordination with the resource agencies. Each element is described below.

### 2.2.1 Prefield Investigation

To prepare for the field surveys, biologists reviewed existing resource information related to the proposed project to evaluate whether sensitive species or other sensitive biological resources (e.g., waters of the United States) could occur in the study area. The sources listed below were reviewed:

- California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California (2007).
- California Natural Diversity Database (CNDDB) records search of the Reedley, Sanger, Traver, Wahtoke, Orange Cove North, Orange Cove South, Selma, Burris Park, and Monson U.S. Geological Survey (USGS) 7.5-minute quadrangles (California Natural Diversity Database 2007) (Appendix A).

- Endangered and threatened species that may occur in or be affected by projects in the Reedley USGS 7.5-minute quadrangle and in Fresno County (obtained from the USFWS web site) (Appendix B).
- California list of noxious weed species (California Department of Food and Agriculture 2004) and invasive plant inventory (California Invasive Plant Council 2006).
- Soil Survey of Fresno County, California (Huntington 1971).

This information was used to develop lists of sensitive species and other sensitive biological resources that could be present in the project region. Species from the lists were considered if they were known to occur in the project region (i.e., within a 16.1-kilometer [10-mile] radius of the study area) or if suitable habitat for the species was known to be present in the study area.

## 2.3 Personnel and Survey Dates

Biological surveys were conducted in the study area on May 9, 2007, by Jones & Stokes botanist Lisa Webber, wildlife biologist Erin Hitchcock, and soil scientist Scott Frazier. Additionally, an elderberry shrub survey was conducted by Ms. Hitchcock on June 20, 2007. Methods for documenting waters of the United States, conducting botanical and wildlife surveys, and evaluating fisheries resources are described below.

### 2.3.1 Waters of the United States

The delineation report (Appendix C) contains a complete discussion of the methods used to delineate waters of the United States. Jurisdictional boundaries for other waters of the United States in the Kings River were identified within the study area, and adjacent seasonal wetlands were observed. Boundaries of other waters of the United States were based on the presence of an ordinary high-water mark (OHWM), as defined in 33 CFR 328.3(e), and wetlands were delineated according to the Corps' *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (U.S. Army Corps of Engineers 2006).

### 2.3.2 Botanical Resources

Sensitive plant and botanical surveys were conducted during the appropriate identification periods for sensitive plants with potential to occur in the study area. A list of plant species encountered during the field visits is included in Appendix D. Vegetation communities in the study area were also identified and mapped during the botanical and delineation field surveys. Results of these surveys are presented in Chapters 3 and 4.

### 2.3.3 Wildlife Resources

The Jones & Stokes wildlife biologist conducted habitat-based field assessment to evaluate habitat suitability for sensitive wildlife species within the study area. She took notes on the general topography of the study area, vegetation present, and the amount of human activity at the site. She also recorded the wildlife observed during the survey. A list of wildlife species observed in the study area is provided in Appendix E. An elderberry shrub survey was also

conducted for shrubs located within 30.5 meters (100 feet) of the project construction area. The survey included a visual search of all shrubs with stems measuring 1 inch in diameter or greater at ground level for exit holes, the location of the shrub (riparian vs. nonriparian), and a stem count of all stems measuring 1 inch in diameter or greater at ground level, specifically noting the size class of each stem (i.e., stems between 2.5 and 7.6 centimeters (1 and 3 inches), 7.6 and 12.7 centimeters (3 and 5 inches), and greater than 12.7 centimeters (5 inches)). Additionally, all shrubs within 30 meters (100 feet) of the construction area were mapped on an aerial photograph of the study area.

### 2.3.4 Fisheries Resources

A Jones & Stokes fisheries biologist, Donna Maniscalco, evaluated the potential for sensitive fish species to occur in the project area using the USFWS species list.

### 2.3.5 Agency Coordination and Professional Contacts

During preparation of this document, Jones & Stokes coordinated with the following federal, state, and local agencies.

### 2.3.6 Federal

Project coordination took place with USFWS.

#### *2.3.6.1 U.S. Fish and Wildlife Service*

*April 20, 2007*

Jones & Stokes obtained a list of all federal proposed and listed endangered and threatened species that could occur in the vicinity of the proposed project from the USFWS web site (U.S. Fish and Wildlife Service 2007). The list is presented in Appendix B.

*October 24, 2007*

Jones & Stokes biologist Erin Hitchcock spoke with USFWS biologist Jeff Jorgenson to obtain information regarding compensation requirements for VELB. Mr. Jorgenson was informed that 12 shrubs are present within the project footprint and will likely need to be removed prior to project construction. However, several of these 12 shrubs appear to be in very poor health and would be unlikely to survive transplantation. Mr. Jorgenson was asked for guidance regarding appropriate replacement and compensation for shrubs that are not transplantable. Mr. Jorgenson responded with the following guidance:

> Unhealthy shrubs that would not be directly impacted by physical damaged due to construction but would be in close proximity to construction, such that their driplines would fall within the construction area, could be left alone and USFWS would have to approve impeding on the typical minimum protection barrier of 20 feet for these shrubs. Unhealthy shrubs that would be directly impacted by construction should be attempted to be transplanted and their survival monitored as is required for all transplanted shrubs, replacement shrubs, and associated native plantings within the conservation area. As described in the Conservation Guidelines, a minimum survival rate of at least 60 percent of the elderberry plants and 60 percent of the associated native plants must be maintained throughout the monitoring period (10 years). Within one year of discovery that survival has dropped below 60 percent, the applicant must replace failed plantings to bring

survival above this level. USFWS would then make a determination as to the applicant's replacement responsibilities.

### 2.3.7 State

Project coordination took place with Caltrans, DFG, and the State Lands Commission (SLC).

#### *2.3.7.1 California Department of Transportation*

*July 17, 2007*

Ms. Hitchcock contacted Caltrans biologist Patricia Kuest to discuss bat roosts in the project area and receive guidance regarding the need for focused bat studies. Ms. Kuest recommended that a focused breeding season survey be conducted during the 2007 breeding season and that fall and winter surveys be conducted prior to the project construction year to determine the seasonal use of the bridge by bats. Ms. Kuest also recommended that DFG be contacted for guidance regarding the need for non-breeding-season bat surveys and appropriate avoidance/minimization and compensation measures for impacts on roosting bats.

#### *2.3.7.2 California Department of Fish and Game*

*July 17, 2007*

Ms. Hitchcock contacted Wendy Cabrerra, DFG biologist, to obtain guidance regarding the need for fall and winter focused bat surveys at the project site and determine appropriate avoidance/minimization and compensation measures for impacts on roosting bats. Ms. Cabrerra stated that she would be leaving DFG at the end of the week and asked that her replacement be contacted regarding this project.

*August 7, 2007*

Ms. Hitchcock contacted DFG biologist Laura Peterson-Diaz, to obtain guidance regarding the need for fall and winter focused bat surveys at the project site and determine appropriate avoidance/minimization and compensation measures for impacts on roosting bats. Ms. Peterson-Diaz provided a copy of a bat guidance report entitled *California Bat Mitigation—Techniques, Solutions, and Effectiveness* (H. T. Harvey and Associates 2004) but was not able to provide project-specific guidance.

#### *2.3.7.3 State Lands Commission*

*July 17, 2007*

Jones & Stokes wetland ecologist Lisa Webber contacted Beverly Cary of SLC regarding the commission's jurisdiction in the study area but received no return call.

*August 29, 2007*

Ms. Webber contacted Susan Young of SLC regarding jurisdiction and leasing interests and emailed project information for SLC's use in its determination.

*November 15, 2007*

Ms. Young responded to Ms. Webber with a letter stating that the project extends into lands under the leasing jurisdiction of the SLC and that an application for lease of these sovereign lands must be submitted to the SLC.

## 2.4 Limitations That May Influence Results

The study area was surveyed during the appropriate blooming time for spring-blooming sensitive plant species with suitable habitat and potential to occur in the area. No sensitive plants were found during the survey, and the botanist determined that the study area did not support suitable microhabitat for any summer-blooming sensitive plant species that occur in the region.

The May and June 2007 field surveys were conducted within the breeding season for migratory birds (generally between March 1 and August 15) and bats (generally April through July) known to occur within the area. A focused breeding-season bat survey was conducted July 25, 2007, within the general breeding season period stated above. Trees within the study area were examined for bird nests, but a focused nest survey was not conducted outside of the immediate project area. A focused nest survey within and adjacent to the project site will be conducted as part of the preconstruction surveys (see Chapter 4).

When elderberry shrubs were not easily accessible, stems were examined using binoculars, and stem sizes were estimated. All elderberry shrubs within 100 feet of the construction area were mapped on an aerial photograph of the study area.

# Chapter 3 Results: Environmental Setting

## 3.1 Description of the Existing Biological and Physical Conditions

### 3.1.1 Study Area

The study area is approximately 11 miles east of SR 99, extending from Kings River Road on the west side of the Kings River to approximately 350 feet from the intersection of Manning Avenue and West Upper Bridge Avenue (see Figure 1-1). The current bridge configuration is 440 feet long by 89 feet 4 inches wide, with spans that range from 40 to 80 feet. It is supported by cast-in-place concrete pierwalls. The project area is approximately 2,275 feet long, including roadway realignments to match the improved bridge.

### 3.1.2 Physical Conditions

The study area is located in the San Joaquin Valley geographic subdivision of the Great Central Valley (Hickman 1993). Topography in the overall study area slopes gradually to the Kings River on the west side; on the east side, the topography is steeply sloped to the river. Elevations in the study area range from approximately 300 to 345 feet above mean sea level.

According to the Fresno County Soil Survey (Huntington 1971), the study area is contained within six soil mapping units: Grangeville fine sandy loam; Grangeville soils, channeled; Hanford fine sandy loam; Pollasky sandy loam; Pollasky fine sandy loam; and Tujunga loamy sand. Several of the soil map units that occur adjacent to the Kings River channel are known to contain hydric soil components and inclusions on floodplains and in drainageways. Soil conditions vary throughout the study area, and the soil profile has been disturbed by the construction of existing roads. Mapped information on soils is discussed in the delineation report (City of Reedley 2007).

The study area is within the Tulare-Buena Vista Lakes hydrologic unit, which includes the Kings River. The Kings River qualifies as other waters of the United States. The specific characteristics of the study area creeks are described further in the delineation report (Jones & Stokes 2007). Annual precipitation averages 11 inches in the project vicinity, with most falling as rain between the months of November and April. Despite several months of below-average rainfall, annual precipitation was within the normal range during the 2006–2007 rainfall year (U.S. Department of Agriculture 2007; Western Regional Climate Center 2007).

### 3.1.3 Biological Conditions in the Biological Study Area

Natural communities in the study area were identified and mapped as five distinct vegetation community types (valley oak riparian forest, riverine wetland, nonnative annual grassland, agricultural land, and landscaping) and one unvegetated community type (open water) (Figure 3-1). The total area of each community type is listed in Table 3-1.

**Table 3-1. Total Area of Natural Communities in the Study Area**

| Community Type | Area (acres) |
|---|---|
| Riparian Forest | 2.48 |
| Riverine Wetland | 0.06 |
| Nonnative Annual Grassland/Ruderal | 2.83 |
| Open Water (Kings River)[a] | 2.97 |
| Agricultural Land | 3.35 |
| **Total[b]** | **11.69** |

[a] The area of the open water community type does not equal the limits of jurisdictional waters of the United States..

[b] Total does not include approximately 13.62 acres of developed/landscaped areas on and adjacent to Manning Avenue.

The study area supports both common natural communities and natural communities of special concern. Common natural communities, which have little diversity of species, are habitats that are widespread, able to reestablish naturally after disturbance, or capable of supporting primarily nonnative species. These communities are not generally protected by agencies unless the specific site is habitat for special-status species or capable of supporting such species (e.g., raptor foraging or nesting habitat or upland habitat in a wetland watershed). The common natural communities in the study area are nonnative annual grassland, agricultural land, landscaping, and developed/paved areas.

Natural communities of special concern are habitats considered sensitive because of their high level of species diversity, high productivity, unusual nature, limited distribution, or declining status. Local, state, and federal agencies consider these habitats important. DFG maintains a list of California terrestrial natural communities that are recognized by the CNDDB (California Department of Fish and Game 2003), although the classification system has been updated from the one used in the CNDDB. The CNDDB contains a current list of rare natural communities throughout the state.

The USFWS considers certain habitats (such as wetlands) important to wildlife, and the U.S. Army Corps of Engineers (Corps) and U.S. Environmental Protection Agency (EPA) consider wetland habitats important for water quality and wildlife. The valley oak riparian forest and riverine wetland community types in the study area are natural communities of special concern. The locations, dominant plant species, and typical wildlife species of each natural community area within the study area are described below. Lists of all plant and wildlife species observed during the field surveys are included in Appendices D and E.

#### *3.1.3.1 Riparian Forest*

Two types of riparian communities occur in the study area, valley oak riparian forest and black willow riparian forest. The valley oak riparian forest, also known as Great Valley valley oak riparian forest (California Department of Fish and Game 2003) is a multi-layered community type that includes an overstory of mature trees, a subcanopy of young trees and shrubs, and an understory of herbaceous vegetation. This community occurs along both banks of the Kings River in the study area. Species observed in the valley oak riparian forest include valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), California black walnut (*Juglans californica*),

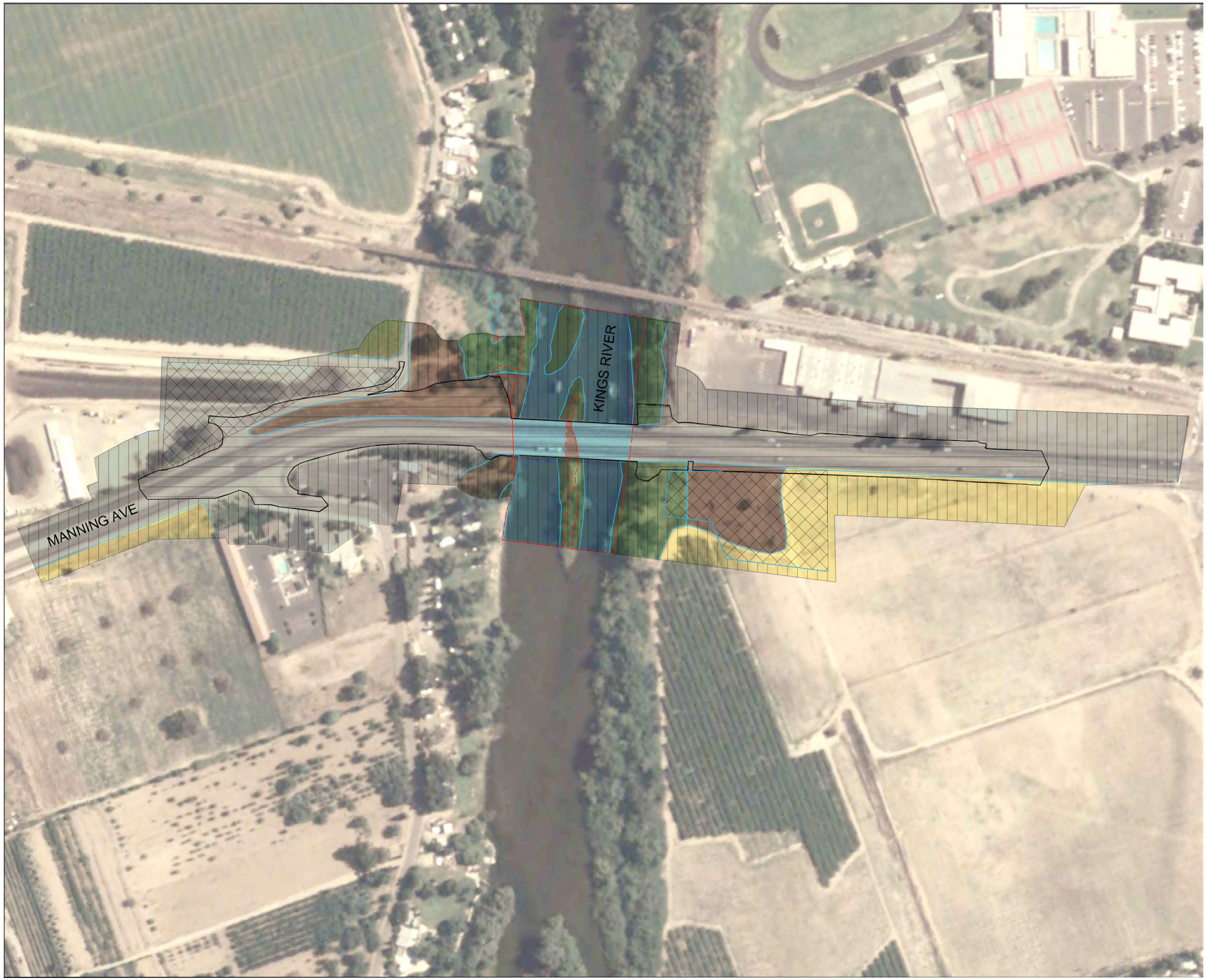



FIGURE 3-1
FULL BRIDGE REPLACEMENT ALTERNATIVE:
NATURAL COMMUNITIES AND IMPACT AREAS

## LEGEND

- DIRECT IMPACT
- STAGING AREA
- INDIRECT IMPACT AREA/STUDY AREA

## NATURAL COMMUNITY TYPES

- GREAT VALLEY VALLEY OAK/BLACK WILLOW RIPARIAN (2.48 ACRES)
- RIVERINE WETLAND (0.06 ACRES)
- NONNATIVE ANNUAL GRASSLAND / RUDERAL (2.83 ACRES)
- AGRICULTURE (3.35 ACRES)
- DEVELOPED / LANDSCAPE (13.62 ACRES)
- OPEN WATER (2.97 ACRES)
- OHWM

N

0 125 250
Scale 1"=250'

black willow (*Salix gooddingii*), narrow-leaved willow (*Salix exigua*), Fremont's cottonwood (*Populus fremontii*), California grape (*Vitis californica*), Mexican elderberry (*Sambucus mexicana*), reed canarygrass (*Phalaris arundinancea*), mugwort (*Artemisia douglasiana*), and Santa Barbara sedge (*Carex barbarae*). White mulberry trees (*Morus alba*) occur adjacent to and under the bridge within the area mapped as valley oak riparian forest. The black willow riparian community covers the two islands within the river in the study area. Species observed in this community include black willow, narrow-leaved willow, horsetail (*Equisetum* sp.), cocklebur (*Xanthium strumarium*), reed canarygrass, and common yellow monkeyflower (*Mimulus guttatus*).

Riparian vegetation provides a variety of functions, such as bank stabilization, erosion control, and wildlife habitat. Riparian forest habitats provide breeding and foraging areas for a wide range of avian species. Woodpeckers, such as Nuttall's woodpecker (*Picoides nuttallii*) and northern flicker (*Colaptes auratus*), excavate nest holes in trees. Abandoned nest holes are used by other birds such as ash-throated flycatcher (*Myiarchus cinerascens*) and western screech owl (*Otus kennicottii*). Other avian species typical of riparian areas in the region include yellow-billed magpie (*Pica nuttalli*), western scrub jay (*Aphelocoma californica*), northern oriole (*Icterus galbula*), and Bewick's wren (*Thryomanes bewickii*).

Small mammals occurring in riparian forest habitats may include the ornate shrew (*Sorex ornatus*), deer mouse (*Peromyscus maniculatus*), and brush mouse (*Peromyscus boylei*). Predators such as the long-tailed weasel (*Mustela frenata*), red fox (*Vulpes vulpes*), and gray fox (*Urocyon cinereoargenteus*) are likely to be attracted to the wooded riparian habitats because of the abundance of prey.

#### *3.1.3.2 Riverine Wetland*

Riverine wetland is a herbaceous community that occurs in depressions in the study area and most likely intercepts groundwater during high-flow periods. Dominant species in this community type are Santa Barbara sedge, reed canarygrass, willow weed (*Epilobium ciliatum*), and horseweed (C*onyza canadensis*). The riverine wetland is anticipated to be considered jurisdictional by the Corps and subject to regulation under CWA Section 404. Regardless of Corps jurisdiction, however, local, state, and federal agencies recognize riverine wetlands as sensitive natural communities.

Riverine wetlands are important to numerous amphibians, wading birds, waterfowl, and shorebirds. Common wildlife known to occur in wetland habitats include bullfrogs (*Rana catesbeiana*), tree frogs (*Hyla regilla*), great egrets (*Ardea alba*), snowy egrets (*Egretta thula*), soras (*Porzana carolina*), American coots (*Fulica americana*), marsh wrens (*Cistothorus palustris*), song sparrows (*Melospiza melodia*), and red-winged blackbirds (*Agelaius phoeniceus*).

#### *3.1.3.3 Nonnative Annual Grassland/Ruderal*

Nonnative annual grassland is a common community that consists of annual grasses and a variety of native and nonnative annual forbs. It occurs within areas upslope of the riparian community and along the edge of Manning Avenue. Dominant grass species within these areas include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Italian ryegrass (*Lolium multiflorum*). Other

characteristic species include redstem filaree (*Erodium cicutarium*), hirschfeldia (*Hirschfeldia incana*), wild radish (*Raphanus sativus*), Russian thistle (*Salsola tragus*), and old man of spring (*Senecio vulgaris*). Few native species were observed in this community type during the field survey, and most of the dominant species observed are invasive species (see Section 3.1.4 below). West of the Kings River, the area mapped as annual grassland supports two valley oaks. Several nonnative, invasive eucalyptus trees also occur north of Manning Avenue.

Annual grasslands are used by many wildlife species for foraging and breeding. The small amount of grassland habitat in the study area limits its suitability as foraging or breeding habitat for wildlife. In addition, its proximity to noise and disturbance from vehicle traffic along Manning Avenue reduces the quality of the habitat for wildlife and decreases the number of species expected to occur there. Grasslands support numerous small mammals, including California vole (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), western harvest mouse (*Reithrodontomys megalotis*), and Botta's pocket gopher (*Thomomys bottae*). Additionally, grasslands provide suitable foraging habitat for coyotes (*Canis latrans*), gopher snakes (*Pituophis melanoleucus*), red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawks (*Buteo lineatus*), American kestrels (*Falco sparverius*), barn owls (*Tyto alba*), great-horned owl (*Bubo virginianus*), and northern harriers (*Circus cyaneus*), which are known to prey on the above-listed small mammals, along with brush rabbits (*Sylvilagus bachmani*) and black-tailed jackrabbits (*Lepus californicus*). Other species associated with grassland habitats include seed-eating and insectivorous species, including western kingbirds (*Tyrannus verticalis*), savannah sparrows (*Passerculus sandwichensis*), western bluebirds (*Sialia mexicana*), western meadowlarks (*Sturnella neglecta*), and pallid bat (*Antrozous pallidus*).

#### *3.1.3.4 Open Water*

The Manning Avenue Bridge crosses the Kings River. Within the study area, a portion of the river is open water. Two islands that support riparian vegetation, as discussed above, occur within the river, and open water flows on either side of and between the islands. The ordinary high water mark of the Kings River is approximately 290 feet, as described in the delineation report (Appendix C).

Open water areas provide habitat for amphibians, fish, and aquatic reptiles and foraging habitat for waterfowl and fish-eating birds. The presence of predatory fish, however, decreases the likelihood that some amphibian species would occur in the Kings River. Wildlife species that could occur in open water areas include bullfrog, western pond turtle (*Emys marmorata),* common garter snake (*Thamnophis sirtalis*), mallard (*Anas platyrhynchos*), and common merganser (*Mergus merganser*). Several species of bats, including, but not limited to, Mexican free-tailed bat (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), pallid bat, and greater western mastiff bat (*Eumops perotis californicus*), could also forage over the river. The Kings River contains several species of fish, including rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*).

#### *3.1.3.5 Agricultural Land*

Agricultural land in the study area includes fields of row crops and orchards. These communities occur in the southeastern portion of the study area above the riverbank.

Agricultural landscapes support numerous species of small mammals, including California voles, deer mice, western harvest mice, and California ground squirrels (*Spermophilus beecheyi*), which in turn provide a prey base for larger predators, including red-tailed hawks, red-shouldered hawks, American kestrels, barn owls, great-horned owl, northern harriers and coyotes. Other bird species, including Brewer's blackbirds (*Euphagus cyanocephalus*), American crows (*Corvus brachyrhynchos*), common ravens (*Corvus corax*), rock doves (*Columba livia*), mourning doves (*Zenaida macroura*), and European starlings (*Sturnus vulgaris*), are also known to occur in agricultural landscapes.

#### *3.1.3.6 Developed/Graded Areas*

Developed/graded areas occur throughout the study area in the form of roads, a bridge, gravelled areas, and structures associated with a camping resort along the river. These areas are characterized by a mixture of landscape ornamentals, including pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), pine (*Pinus* sp.), turf grass, and ruderal species that typically colonize recently disturbed or graded areas. Because of noise disturbance and human activity, developed/graded portions of the study area provide habitat of low value. However, bridges provide nesting habitat for cliff swallows (*Petrochelidon pyrrhonota*) and roosting habitat for numerous bats. Bats that could use the bridge in study area for roosting habitat include Mexican free-tailed bat, pallid bat, big brown bat (*Eptisicus fuscus*), and Yuma myotis.

### 3.1.4 Invasive Plant Species

Invasive plant species include species designated as federal noxious weeds by the U.S. Department of Agriculture (USDA), species listed by the California Department of Food and Agriculture (CDFA), and other invasive plants designated by the California Invasive Plant Council (Cal-IPC). Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plant species. The introduction and spread of invasive plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. Table 3-2 identifies invasive plant species located in the study area. Most of these species occur within areas mapped as annual grassland, but Himalayan blackberry is common within riparian forest.

**Table 3-2. Invasive Plant Species Located in the Study Area**

| Species | CDFA | Cal-IPC |
|---|---|---|
| Wild oat (*Avena fatua*) | – | Moderate |
| Ripgut brome (*Bromus diandrus*) | – | Moderate |
| Soft chess (*Bromus hordeaceus*) | – | Limited |
| Bermuda grass (*Cynodon dactylon*) | C | Moderate |
| Red-stemmed filaree (*Erodium cicutarium*) | – | Limited |
| Eucalyptus (*Eucalyptus* sp.) | – | Limited or Moderate |
| Hirschfeldia (*Hirschfeldia incana*) | – | Moderate |
| Foxtail barley (*Hordeum murinum* ssp. *leporinum*) | – | Moderate |
| Italian ryegrass (*Lolium multiflorum*) | – | Moderate |
| Burclover (*Medicago polymorpha*) | – | Limited |
| Parrot's feather (*Myiophyllum aquaticum*) | – | High |
| Tree tobacco (*Nicotiana glauca*) | – | Moderate |
| Harding grass (*Phalaris aquatica)* | – | Moderate |
| Rabbit's-foot grass (*Polypogon monspeliensis*) | – | Limited |
| Wild radish (*Raphanus sativus*) | – | Limited |
| Himalayan blackberry (*Rubus discolor*) | – | High |
| Curly dock (*Rumex crispus*) | – | Limited |
| Russian thistle (*Salsola tragus*) | C | Limited |
| Peruvian pepper tree (*Schinus molle*) | – | Limited |
| Milk thistle (*Silybum marinum*) | – | Limited |

*Notes:* The CDFA and Cal-IPC lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances.

The CDFA categories indicated in the table are defined as follows:

- **C:** State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the commissioner.

The Cal-IPC categories indicated in the table are defined as follows:

- **High:** Species with severe ecological impacts, high rates of dispersal and establishment, and usually widely distributed.
- **Moderate:** Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, and limited to widespread distribution; establishment dependent on disturbance.
- **Limited:** Species with minor ecological impacts, low to moderate rates of invasion, and limited distribution; locally persistent and problematic.

## 3.2 Regional Species and Habitats of Concern

Tables 3-3 and 3-4 list sensitive plant, wildlife, and fish species that are known to occur or have the potential to occur in the geographic region. These species were identified using the CNDDB records search (California Natural Diversity Database 2007), CNPS Inventory of Rare and Endangered Plants (2007), species lists provided by USFWS, and species distribution and habitat requirements data.

#### *3.2.1.1 California Natural Diversity Database Search Results*

The CNDDB (2007) search indicated that 16 sensitive species (nine plant species, seven wildlife species) have been recorded within 10 miles of the study area. None of these sensitive species have been recorded within the study area.

**Table 3-3. Special-Status Plant Species with Potential to Occur in the Manning Avenue Bridge Replacement Project Area**

| Common Name | Scientific Name | Status Fed/State/ CNPS | Geographic Distribution | General Habitat Description | Blooming Period | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|---|---|
| Brittlescale | *Atriplex depressa* | –/–/1B.2 | Alameda, Contra Costa, Colusa, Fresno, Glenn, Merced, Solano, Stanislaus, Tulare, and Yolo counties | Annual herb found in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools/ alkaline clay; 3–66 feet (1–20 meters). | May–Oct | Absent | No suitable (alkaline or clay) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| Earlimart orache | *Atriplex erecticaulis* | –/–/1B.2 | San Joaquin Valley in Kings, Kern and Tulare counties | Annual herb found in valley and foothill grassland/semi-alkaline and alkaline; 131–328 feet (40–100 meters). | Aug–Sept | Absent | No suitable (alkaline) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. |
| Lesser saltscale | *Atriplex minuscula* | –/–/1B.1 | Sacramento and San Joaquin Valley, Butte County and from Merced County to Kern County | Annual herb found in chenopod scrub, Playas, Valley and foothill grassland/alkaline, sandy; 49–656 feet (15–200 meters). | May–Oct | Absent | No suitable (alkaline) soils present for this species. Soils not sandy outside of the active river channel and floodplain, where grassland habitat occurs. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| Slender Moonwort | *Botrychium lineare* | C/–/1B.3 | Fresno County, CA and Idaho, Nevada, Oregon, Utah, and Washington. Known in CA from only one small occurrence near Piute Pass. Only ten occurrences rangewide, some historical (CNPS 2007). | Perennial herb found in upper montane coniferous forest/ often disturbed areas; 8,530 feet (2,600 meters). | Unknown | Absent | No coniferous forest habitat present. Outside of known elevational range for this species. |

| Common Name | Scientific Name | Status Fed/State/ CNPS | Geographic Distribution | General Habitat Description | Blooming Period | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|---|---|
| Succulent owl's-clover | *Castilleja campestris ssp. succulenta* | T/E/1B.2 | Southern Sierra Nevada foothills, eastern San Joaquin Valley, Fresno, Madera, Merced, Mariposa, San Joaquin, and Stanislaus counties | Hemiparasitic annual herb found in vernal pools/often acidic soils; 164–2,461 feet (50–750 meters). | Apr–May | Absent | No vernal pool habitat present. |
| Mariposa pussy-paws | *Calyptridium pulchellum* | T/–/1B.1 | Fresno, Madera, and Mariposa counties | Annual herb found in chaparral and cismontane woodland /sandy or gravelly, granitic soils; 1,312–4,003 feet (400–1,220 meters). | Apr–Aug | Absent | Outside of known elevational range for this species. Not observed during blooming-period surveys. |
| San Benito evening-primrose | *Camissonia benitensis* | T/E/1B.1 | Fresno and San Benito counties | Annual herb found in chaparral, cismontane woodland, valley and foothill grassland /serpentinite alluvium, clay or gravelly; 1,969–4,199 feet (600–1,280 meters). | Apr–June | Absent | No suitable (serpentinite) soils present for this species. Outside of known elevational range for this species. Not observed during blooming-period surveys. |
| California jewelflower | *Caulanthus californicus* | E/E/1B.1 | Fresno, Kings, Kern, Santa Barbara, San Luis Obispo, and Tulare counties | Annual herb found in Chenopod scrub, Pinyon and juniper woodland, and valley and foothill grassland /sandy; 230–3,281 feet (70–1,000 meters). | Feb–May | Absent | Soils not sandy outside of the active river channel and floodplain, where grassland habitat occurs. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| Hoover's spurge | *Chamaesyce hooveri* | T/–/1B.2 | Butte, Colusa, Glenn, Merced, Stanislaus, Tehama, and Tulare counties | Annual herb found in vernal pools; 82–820 feet (25–250 meters). | Jul–Sept (uncommonly Oct) | Absent | No vernal pool habitat present. |

**Table 3-3.** Continued



| Common Name | Scientific Name | Status Fed/State/ CNPS | Geographic Distribution | General Habitat Description | Blooming Period | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|---|---|
| Palmate-bracted bird's-beak | *Cordylanthus palmatus* | E/E/1B.1 | Alameda, Colusa, Fresno, Glenn, Madera, San Joaquin, and Yolo counties | Hemiparasitic annual herb found in chenopod scrub, and valley and foothill grassland /alkaline; 16–509 feet (5–155 meters). | May–Oct | Absent | No suitable (alkaline) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period surveys. |
| Recurved larkspur | *Delphinium recurvatum* | –/–/1B.2 | San Joaquin Valley and interior valleys of the South Coast Ranges, Contra Costa County to Kern County | Perennial herb found in alkaline soils in annual grassland, chenopod scrub, cismontane woodland; 10–2,461 feet (3–750 meters). | Mar–June | Absent | No suitable (alkaline) soils present for this species. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period surveys. |
| Spiny-sepaled button-celery | *Eryngium spinosepalum* | –/–/1B.2 | Eastern San Joaquin Valley and Sierra Nevada foothills, Calaveras, Fresno, Madera, Stanislaus, Tulare, and Tuolumne counties | Annual/perennial herb found in valley and foothill grassland, vernal pools; 330–840 feet (100–255 meters). | Apr–May | Absent | No vernal pool habitat present; annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. Nearest recorded occurrences are 9.5 and 10 miles northeast of the study area (CNDDB 2007). |
| Kings River monkeyflowers | *Mimulus acutidens* | –/–/3 | Fresno, Madera, and Tulare counties | Annual herb found in cismontane woodland and lower montane coniferous forest; 1,001–4,003 feet (305–1,220 meters). | Apr–July | Absent | Outside of known elevational range for this species. Not observed during blooming-period survey. |

| Common Name | Scientific Name | Status Fed/State/ CNPS | Geographic Distribution | General Habitat Description | Blooming Period | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|---|---|
| California satintail | *Imperata brevifolia* | –/–/2.1 | Butte, Fresno, Imperial, Inyo, Kern, Lake, Los Angeles, Orange, Riverside, San Bernardino, Tehama, Tulare, and Ventura counties | Rhizomatous herb found in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps often in alkali soils, and riparian scrub/mesic; 0–1,640 feet (0–500 meters). | Sept–May | Absent | Soils unsuitable for this species (not alkali). Not observed during blooming-period survey. Nearest recorded location (last observed in 1933) is estimated at 0.5 mile southeast of the study area "on a canal bank near Reedley" (CNDDB 2007). |
| San Joaquin woolly-threads | *Monolopia congdonii* | E/–/1B.2 | Fresno, Kings, Kern, Santa Barbara, San Benito, San Luis Obispo, and Tulare counties | Annual herb found in chenopod scrub and valley and foothill grassland (sandy soils); 197–2,625 feet (60–800 meters). | Feb–May | Absent | Soils not sandy outside of the active river channel and floodplain, where grassland habitat occurs. Annual grassland habitat is degraded and dominated by ruderal species. Not observed during blooming-period survey. |
| San Joaquin Valley Orcutt grass | *Orcuttia inaequalis* | T/E/1B.1 | Scattered locations along east edge of the San Joaquin Valley and adjacent foothills, from Stanislaus County to Tulare County | Annual herb found in vernal pools; 33–2,477 feet (10–755 meters). | May–Sep | Absent | No vernal pool habitat present. |
| Hairy Orcutt grass | *Orcuttia pilosa* | E/E/1B.1 | Scattered locations along east edge of the Central Valley and adjacent foothills, from Tehama County to Merced County | Annual herb found in vernal pools; 180–656 feet (55–200 meters). | May–Aug | Absent | No vernal pool habitat present. Nearest recorded occurrence is an extirpated occurrence approximately 5 miles northeast of the study area. |

| Common Name | Scientific Name | Status Fed/State/ CNPS | Geographic Distribution | General Habitat Description | Blooming Period | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|---|---|
| Hartweg's golden sunburst | *Pseudobahia bahiifolia* | E/E/1B.1 | Eastern side of Sacramento–San Joaquin Valleys and adjacent foothills, historically as far north as Yuba County | Annual shrub found predominantly on northern slopes of rocky, bare areas along rolling hills, shady creeks, adjacent to vernal pools and streams, on heavy clay soils in grasslands, 50–500 feet (15–150 meters). | Mar–Apr | Absent | No suitable soils for this species; no rocky, bare areas in the annual grassland, which is degraded and dominated by ruderal species. |
| San Joaquin adobe sunburst | *Pseudobahia peirsonii* | T/E/1B.1 | Fresno, Kern, and Tulare counties | Annual herb found in cismontane woodland, valley and foothill grassland /adobe clay soils; 295–2,625 feet (90–800 meters). | Mar–Apr | Absent | No suitable soils in the riparian woodland for this species; the annual grassland is degraded and dominated by ruderal species. Nearest recorded locations are an extirpated occurrence approximately 6.5 miles southeast of the study area and an occurrence approximately 8 miles north of the study area (CNDDB 2007). |
| Keck's checker-mallow | *Sidalcea keckii* | E/–/1B.1 | Tulare and Fresno counties | Annual herb found in cismontane woodland, valley and foothill grassland /serpentinite clay; 394–1,394 feet (120–425 meters). | Apr | Absent | No suitable soils for this species. Annual grassland habitat is degraded and dominated by ruderal species. |
| Green’s tuctoria | *Tuctoia greenei* | E/R/1B.1 | Scattered distribution along eastern Central Valley and foothills from Shasta County to Tulare County | Annual herb found in dry vernal pool bottoms; 100–3,350 feet (30–1,070 meters). | May–Jun | Absent | No vernal pool habitat present. |

Status explanations:

**Federal**
E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
– = no listing.

**State**
E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
– = no listing.

**California Native Plant Society**
1A = List 1A species: presumed extinct in California.
1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
2 = Rare, threatened, or endangered in California, but more common elsewhere
0.2 = Fairly endangered in California
0.1 = Seriously endangered in California
3 = More information about this plant is needed
– = no listing.

Habitat Present/Absent explanations:

Absent = No habitat present and no further work needed.
Habitat Present = Habitat is, or may be present. The species may be present.
Present = Species is present
Critical Habitat = Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

**Table 3-4. Special-Status Wildlife Species with Potential to Occur in the Manning Avenue Bridge Replacement Project Area**

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| **Wildlife** | | | | | |
| ***Invertebrates*** | | | | | |
| Valley elderberry longhorn beetle | *Desmocerus californicus dimorphus* | T/– | Stream side habitats below 3,000 feet throughout the Central Valley.<br>Riparian and oak savanna habitats with elderberry shrubs; elderberries are the host plant. | Habitat Present | CNDDB records occur within 10 miles of the study area; closest occurrence just under 1 mile from the study area. 12 Elderberry shrubs occur in the project area. |
| Vernal pool fairy shrimp | *Branchinecta lynchi* | T/– | Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.<br>Common in vernal pools; also found in sandstone rock outcrop pools. | Absent | CNDDB records occur within 10 miles of the study area, however, there are no vernal pools, seasonal wetlands, rock outcrop pools, or other suitable water bodies within the study area. |
| Vernal pool tadpole shrimp | *Lepidurus packardi* | E/– | Shasta County south to Merced County.<br>Vernal pools and ephemeral stock ponds. | Absent | CNDDB records occur within 10 miles of the study area, however there are no vernal pools or ponds within the study area. |
| ***Amphibians*** | | | | | |
| California tiger salamander | *Ambystoma californiense* | T/SSC | Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County.<br>Small ponds, lakes, or vernal pools in grass-lands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy. | Absent | CNDDB records occur within 10 miles of the study area. Permanent water bodies, such as the Kings River are not suitable for this species. No other water bodies occur in the study area. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| California red-legged frog | *Rana aurora draytonii* | T/SSC | Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehema County to Fresno County.<br>Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods. | Absent | There are no known populations within 10 miles of the study area. The portion of the Kings River in the study area does not contain still to slow moving pools required for breeding. No other water bodies occur in the study area. |
| Mountain yellow-legged frog | *Rana muscosa* | C/SSC | Found in the Sierra Nevada above 4,500 feet from Plumas County to southern Tulare County. Isolated populations in Butte County and near Mono Lake, Mono County.<br>Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, sub-alpine conifer, and wet meadow habitats. | Absent | No CNDDB records occur within 10 miles of the study area. The study area is outside of the elevational range for this species. |
| Yosemite toad | *Bufo canorus* | C/SSC | Sierra Nevada from Blue Lake region north of Ebbets Pass in Alpine County to 5 km south of Kaiser Pass in the Evolution Lake/Darwin Canyon area in Fresno County; 4,800-12,000 feet, mostly above 9,000 feet.<br>Inhabits montane wet meadows and seasonal ponds associated with lodgepole pine and subalpine conifer forests. Breeds in shallow pools or lake margins, shelters in burrows or clumps of grass, sedges or willows. | Absent | No CNDDB records occur within 10 miles of the study area. The study area is outside of the elevational range for this species. |
| Western spadefoot | *Scaphiopus hammondii* | –/SSC | Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California.<br>Shallow streams with riffles and seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands. | Absent | CNDDB records occur within 10 miles of the study area but the Kings River does not provide suitable habitat for this species. The seasonal wetland adjacent to the Kings River is not suitable for this species. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| ***Reptiles*** | | | | | |
| Blunt-nosed leopard lizard *Gambelia (=Crotaphytus) silus* | *Gambelia (=Crotaphytus) silus* | E/E, FP | San Joaquin Valley from Stanislaus County through Kern County and along the eastern edges of San Luis Obispo and San Benito Counties.<br>Open habitats with scattered low bushes on alkali flats, and low foothills, canyon floors, plains, washes, and arroyos; substrates may range from sandy or gravelly soils to hardpan. | Absent | No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable habitat for this species. |
| Giant garter snake *Thamnophis couchi gigas* | *Thamnophis couchi gigas* | T/T | Central Valley from the vicinity of Burrel in Fresno County north to near Chico in Butte County; has been extirpated from areas south of Fresno.<br>Sloughs, canals, low gradient streams and freshwater marsh habitats where there is a prey base of small fish and amphibians; also found in irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter. | Absent | No CNDDB records occur within 10 miles of the study area. The Kings River is a high gradient river and would not be suitable for giant garter snake. |
| Western pond turtle | *Emys marmorata* | –/SSC | Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada.<br>Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. | Habitat Present | CNDDB records occur within 10 miles of the study area; closest reported occurrence is 10 miles northeast of the study area in Wahtoke Creek. The Kings River provides suitable habitat for this species. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| ***Birds*** | | | | | |
| California condor | *Gymnogyps californianus* | E/E, FP | Historically, rugged mountain ranges surrounding the southern San Joaquin Valley; currently, most individuals are in captive populations, but a few birds were recently released in the rugged portions of the Los Padres National Forest.<br>Requires large blocks of open savanna, grasslands, and foothill chaparral with large trees, cliffs, and snags for roosting and nesting. | Absent | No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable nesting or foraging habitat. |
| Bald eagle | *Haliaeetus leucocephalus* | D/E, FP | Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County.<br>In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean. | Absent | Potential winter visitor to the study area only. No CNDDB records occur within 10 miles of the study area. |
| White-tailed kite | *Elanus leucurus* | -/FP | Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills, to western San Diego County at the Mexican border.<br>Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging. | Habitat Present | No CNDDB records occur within 10 miles of the study area, however, the riparian woodlands in study area provide suitable nesting habitat for this species. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| Swainson's hawk | *Buteo swansong* | –/T | Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley. Highest nesting densities occur near Davis and Woodland, Yolo County.<br>Nests in oaks or cottonwoods in or near riparian habitats. Forages in grasslands, irrigated pastures, and grain fields. | Habitat Present | No CNDDB records occur within 10 miles of the study area, however, the riparian woodlands in study area provide suitable nesting habitat for this species. |
| Western burrowing owl | *Athene cunicularia hypugea* | –/SSC | Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas. Rare along south coast.<br>Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows. | Absent | CNDDB records occur within 10 miles of the study area, however, this species does not occur in Riverine habitats. Non-native grassland along Manning Avenue provides limited suitable denning and foraging habitat for this species. |
| Tricolored blackbird | *Agelaius triocolor* | –/SSC | Largely endemic to California; permanent resident in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties.<br>Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant. | Absent | No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable nesting or foraging habitat for this species. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| Western yellow-billed cuckoo | *Coccyzus americanus occidentalis* | –/E | Nests along the upper Sacramento, lower Feather, south fork of the Kern, Amargosa, Santa Ana, and Colorado Rivers.<br>Wide, dense riparian forests with a thick understory of willows for nesting; sites with a dominant cottonwood overstory are preferred for foraging; may avoid valley-oak riparian habitats where scrub jays are abundant. | Absent | CNDDB records occur within 10 miles of the study area. The study area is not suitable for this species as it consists mainly of valley oak riparian with numerous scrub jays. |
| ***Mammals*** | | | | | |
| Greater western mastiff bat | *Eumops perotis californicus* | –/SSC | Occurs along the western Sierra primarily at low to mid elevations and widely distributed throughout the southern coast ranges. Recent surveys have detected the species north to the Oregon border.<br>Found in a wide variety of habitats from desert scrub to montane conifer. Roosts and breeds in deep, narrow rock crevices, but may also use crevices in trees, buildings, and tunnels. | Habitat Present | CNDDB records occur within 10 miles of the study area; species was not detected in the study area during bat acoustical monitoring. Study area provides suitable roosting and foraging habitat. |
| Pallid bat | *Antrozous pallidus* | –/SSC | Occurs throughout California except the high Sierra from Shasta to Kern County and the northwest coast, primarily at lower and mid elevations.<br>Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts. | Habitat Present | CNDDB records occur within 10 miles of the study area; bat acoustical monitoring picked up a few calls in the echolocation range of pallid bat (25–30 kHz) but positive identification of this species could not be made. Study area provides suitable roosting and foraging habitat. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| Fresno kangaroo rat | *Dipodomys nitratoides exilis* | E/E | Historically found from Merced County south to central Fresno County.<br>Found at elevations from 200 to 300 feet in alkali sink habitats. | Absent | No CNDDB records occur within 10 miles of the study area. The study area does not contain suitable habitat for this species. |
| Tipton kangaroo rat | *Dipodomys nitratoides nitratoides* | E/E/– | Occurs in the Tulare Lake Basin in portions of Fresno, Tulare, King and Kern Counties.<br>Found at elevations from 200 to 300 feet in arid grassland and alkali desert scrub communities with sparsely scattered shrubs; soil is usually finely textured and alkaline; may use areas that flood in winter and spring. | Absent | No CNDDB records occur within 10 miles of the study area. This species is found in arid habitats not present in the study area. |
| Giant kangaroo rat | *Dipodomys ingens* | E/E | Occurs at high densities in only 12 square miles of habitat along the western side of the San Joaquin Valley, in five separate localities on Elkhorn Plain, Carrizo Plain, McKittrick Valley, and Cuyama Valley in Kern and San Luis Obispo Counties.<br>Restricted to flat, sparsely vegetated areas with native annual grassland and shrubland habitats; requires uncultivated soils consisting of dry, fine, sandy loams for burrowing. | Absent | No CNDDB records occur within 10 miles of the study area. This species is found in sparsely vegetated grassland and shrubland habitats not present in the study area. |
| Pacific fisher | *Martes pennanti* | C/SSC | Pacific fisher occurs in the Sierra Nevada, Cascades, and Klamath Mountains and in small portions of the North Coast Ranges.<br>Occupies large, mature, dense coniferous forests with greater than 50% canopy closure and deciduous-riparian habitat with extensive canopy closure. Hollow logs and trees, snags, brush piles, and other protected cavities are used as den sites. | Absent | No CNDDB records occur within 10 miles of the study area. The study area is outside of the elevational range for this species. |

| Common Name | Scientific Name | Status Federal/State | General Habitat Description | Habitat Present/ Absent | Rationale |
|---|---|---|---|---|---|
| San Joaquin kit fox | *Vulpes macrotis mutica* | E/T | Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County.<br>Saltbush scrub, grassland, oak, savanna, and freshwater scrub. | Absent | CNDDB records occur within 10 miles of the study area (closest occurrence 12.5 miles). This species may use the study area as a migration corridor but the study area does not contain a substantial small mammal prey base for foraging and contains limited suitable denning habitat in the non-native grassland along Manning Avenue. |
| ***Fish*** | | | | | |
| Delta smelt | *Hypomesus transpacificus* | T/T | Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.<br>Occurs in estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand (Moyle 2002). | Absent | Outside of known range |
| Central Valley steelhead | *Oncorhynchus mykiss* | T/– | Sacramento River and tributary Central Valley rivers.<br>Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 7.8 to 18°C (Moyle 2002). Habitat types are riffles, runs, and pools. | Absent | Outside of known range |
| Lahontan cutthroat trout | *Oncorhynchus clarki henshawi* | T/– | Streams and lakes of the Lahontan system on the east side of the Sierra Nevada.<br>Clear cold mountain rivers | Absent | Outside of known range |
| Paiute cutthroat trout | *Oncorhynchus clarki seleniris* | T/– | Silver King Creek in Alpine County<br>Clear cold mountain rivers | Absent | Outside of known range |

Status explanations:

**Federal**

E = listed as endangered under the federal Endangered Species Act.
T = listed as threatened under the federal Endangered Species Act.
PE = proposed for federal listing as endangered under the federal Endangered Species Act.
PT = proposed for federal listing as threatened under the federal Endangered Species Act.
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.
D = delisted under the federal Endangered Species Act.
– = no listing.

**State**

E = listed as endangered under the California Endangered Species Act.
T = listed as threatened under the California Endangered Species Act.
FP = fully protected under the California Fish and Game Code.
SSC = species of special concern in California.
– = no listing.

Habitat Present/Absent explanations:

| | | |
|---|---|---|
| Absent | = | No habitat present and no further work needed. |
| Habitat Present | = | Habitat is, or may be present. The species may be present. |
| Present | = | Species is present |
| Critical Habitat | = | Project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. |

#### 3.2.1.2 U.S. Fish and Wildlife Service Species List

USFWS provided a list of 34 sensitive species (13 plant species, 17 wildlife species, and four fish species) that may occur in the study area or be affected by projects in the Reedley USGS 7.5-minute quadrangle and in Fresno County (Appendix A).

#### 3.2.1.3 Sensitive Plant Species

During the prefield investigation, 21 sensitive plant species were determined to have the potential to occur in the project region (Table 3-3). Suitable plant communities for 12 species were identified in the study area; however, suitable soil types for these species were not present. In addition, the study area has a high level of disturbance from previous activities such that suitable microhabitat conditions for sensitive plant species are not present. The annual grassland community in the study area is degraded due to previous bridge construction and current adjacent land uses; it supports primarily ruderal (weedy) species. No sensitive species were observed in the study area during the May 9, 2007, field survey, and the botanist determined that the occurrence of late-blooming species was unlikely. Therefore, the study area has a low potential to support sensitive plant species.

#### 3.2.1.4 Sensitive Wildlife Species

Based on review of the CNDDB and USFWS lists and professional knowledge of species current distributions, 25 sensitive wildlife species were identified as having potential to occur within the project region (Table 3-4). After completion of the field survey and a review of the species' distribution and habitat requirements data, the biologist determined that 17 of the 25 species would not occur at the study area because it lacks suitable habitat for those species or the area is outside the species' known range. An explanation for the absence each of the species from the study area is provided in Table 3-4. Two species, San Joaquin kit fox and western burrowing owl, have low potential for occurrence due to the lack of suitable breeding habitat and the limited prey base within the study area. Because of this low potential, these species are not discussed further.

The remaining six sensitive wildlife species—valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*), western pond turtle, pallid bat, greater western mastiff bat, white-tailed kite (*Elanus leucurus*), and Swainson's hawk (*Buteo swainsoni*)—have the potential to occur in the study area or may be affected by construction activities. These species are discussed in Chapter 4.

#### 3.2.1.5 Sensitive Fish Species

After review of the USFWS list, four sensitive fish species were initially identified as having the potential to occur within the project region (Table 3-4). Of the four sensitive fish species listed in Table 3-4, none would occur at the study area because it lacks suitable habitat for the species or the area is outside the species' known range. An explanation for the absence each of the species from the study area is provided in Table 3-4.

#### 3.2.1.6 Other Protected Species

Other protected species include migratory birds, including raptors, and native trees.

### *Migratory Birds*

Nonsensitive migratory birds, including raptors, have the potential to nest in trees and shrubs throughout the study area. Cliff swallows were observed nesting under the bridge in the study area. Although these species are not considered sensitive wildlife species, their occupied nests and eggs are protected by CDFG codes 3503 and 3503.5 and the MBTA.

### *Native Trees*

Native oak, cottonwood, and willow trees occur within the riparian habitat, which could be of concern to DFG with respect to the Streambed Alteration Agreement (Table 3-5). The locations of these trees are presented in Figure 3-2.

**Table 3-5. Native Trees Located in the Study Area**

| Tree Number [a] | Species | Approximate Diameter at Breast Height (inches)[b] |
|---|---|---|
| 1 | Valley oak | 18 + 18 |
| 2 | Valley oak | 24 |
| 3 | Fremont's cottonwood | 36 |
| 4 | Valley oaks (cluster) | 6, 4, 4, 4, 3, 3 |
| 5 | Black willows (cluster) | ≥ 24 each |
| 6 | Arroyo willow | 12 |
| 7 | Fremont's cottonwood | 18 |
| 8 | Valley oak | 8 |
| 9 | Valley oak | 24 |
| 10 | Valley oak | 24 |
| 11 | Valley oak | 12 + 12 + 12 + 12 |
| 12 | Valley oak | 12 + 8 |
| 13 | Valley oak | 6 |
| 14 | Black willow | 24 |
| 15 | Valley oak | 24 + 24 |
| 16 | Arroyo willow | 6 |
| 17 | Valley oak | 12 |

[a] Refers to numbers in Figure 3-2.

[b] Tree diameters with more than one number (+) indicate a multi-trunk tree.

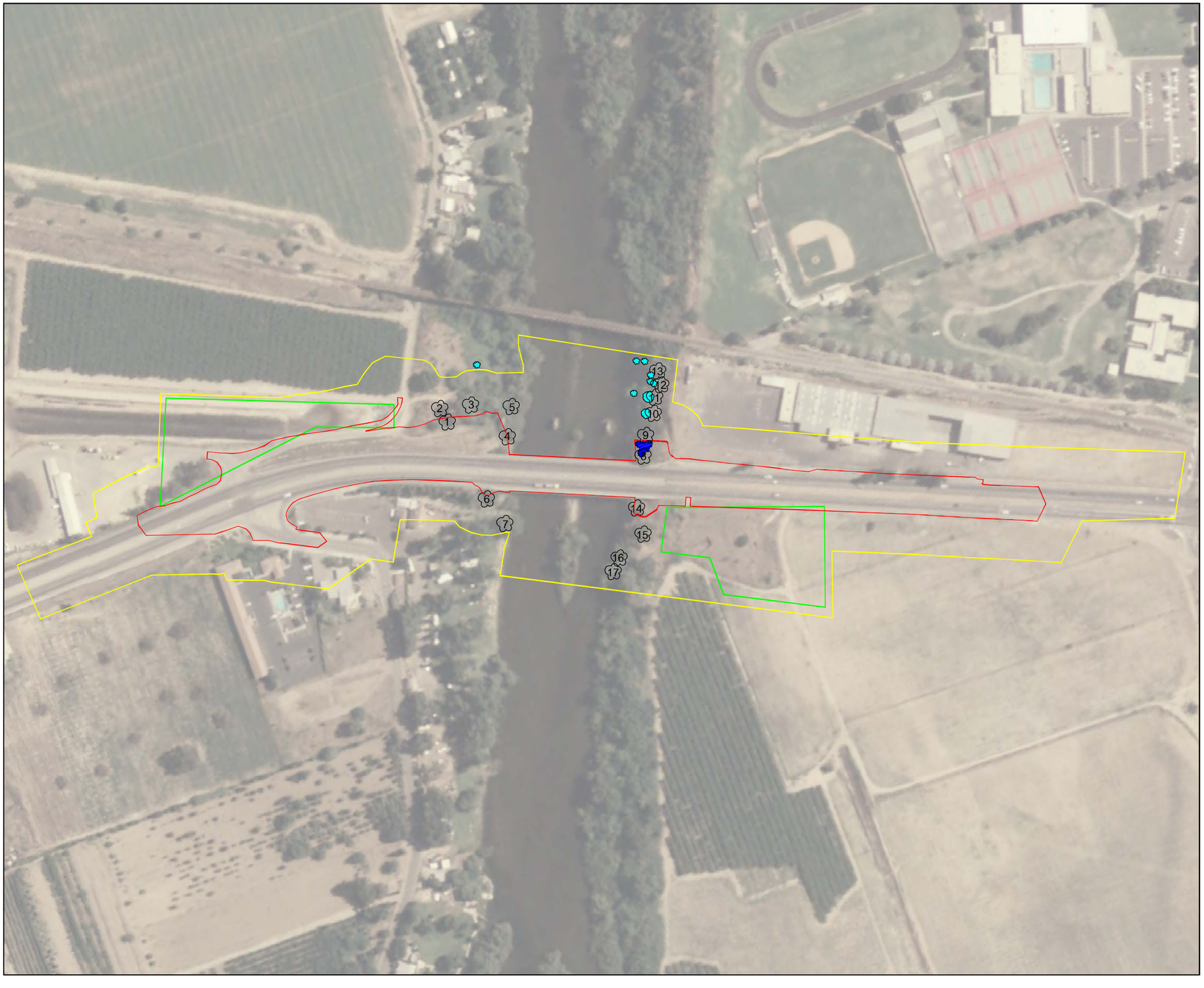



FIGURE 3-2
FULL BRIDGE REPLACEMENT ALTERNATIVE:
NATIVE TREES AND ELDERBERRY SHRUBS IN THE STUDY AREA

## LEGEND

- DIRECT IMPACT
- STAGING AREA
- INDIRECT IMPACT AREA/STUDY AREA
- ELDERBERRY SHRUBS TO BE PROTECTED (NUMBERS 13-43)
- ELDERBERRY SHRUBS TO BE TRANSPLANTED (NUMBERS 1-12)
- TREES WITHIN CONSTRUCTION AREA

## Tree Types

1. Valley Oak
2. Valley Oak
3. Fremont's Cottonwood
4. Valley Oaks
5. Black Willows
6. Arroyo Willow
7. Fremont's Cottonwood
8. Valley Oak
9. Valley Oak
10. Valley Oak
11. Valley Oak
12. Valley Oak
13. Valley Oak
14. Black Willow
15. Valley Oak
16. Arroyo Willow
17. Valley Oak

N

0 125 250
Scale 1"=250'

# Chapter 4 Results: Biological Resources, Discussion of Impacts, and Mitigation

The discussion of impacts and mitigation in this chapter includes both the proposed project and the project alternative (partial bridge replacement and rehabilitation); however, the alternative discussion is included only for those natural communities and sensitive species that would be affected by construction of the alternative. The alternative impact discussion is provided as a qualitative analysis, because all impacts would be of the same type, but at a lower intensity, as those described for the proposed project.

## 4.1 Sensitive Species Potentially in the Study Area

No sensitive plant species are present in the study area, as discussed below in Section 4.3. Sensitive wildlife species that could occur in or adjacent to the study area, or could be affected by construction activities, include valley elderberry longhorn beetle, western pond turtle, bats, cliff swallows and barn swallows, and migratory birds (including raptors). These species are discussed below in Section 4.4.

## 4.2 Natural Communities of Special Concern

The study area supports three natural communities of special concern: riparian forest, riverine wetland, and open water. The remainder of the study area supports nonnative annual grassland/ruderal, agricultural, and developed/landscaped communities, as discussed in Chapter 3.

### 4.2.1 Riparian Forest

#### *4.2.1.1 Survey Results*

Valley oak riparian forest occurs along both banks of the Kings River and supports valley oak, Oregon ash, California black walnut, black willow, narrow-leaved willow, Fremont's cottonwood, California grape, Mexican elderberry, reed canarygrass, mugwort, and Santa Barbara sedge. Nonnative white mulberry trees occur adjacent to and under the bridge within this area. The black willow riparian community covers the two islands within the river and supports black willow, narrow-leaved willow, horsetail, cocklebur, reed canarygrass, and common yellow monkeyflower.

Riparian communities are considered sensitive locally, regionally, and statewide because of their habitat value and decline in extent. CDFG has adopted a no-net-loss policy for riparian habitat values, and the Streambed Alteration Agreement (SAA) would include mitigation requirements for loss of riparian vegetation. USFWS mitigation policy identifies California's riparian habitats in Resource Category 2, which recommends no net loss of existing habitat value (46 FR 7644).

#### 4.2.1.2 Avoidance and Minimization Efforts

Implementation of the following avoidance and minimization measures would ensure that the proposed project would minimize effects on riparian habitat within and adjacent to the study area.

*Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources to Be Avoided*

The City of Reedley or its contractor will install orange construction barrier fencing to identify environmentally sensitive areas. A qualified biologist will identify sensitive biological habitat at the bridge site before the final design plans are prepared so that the areas to be fenced can be included in the plans. The pockets within this area that are to be avoided during construction should be fenced off to avoid disturbance. Sensitive biological habitat that occurs adjacent to the construction area includes the Kings River, the riverine wetland, native trees, elderberry shrubs, and any trees that support nests of special-status bird species.

Before construction, the construction contractor will work with the project engineer and a resource specialist to identify the locations for the barrier fencing and will place stakes around the sensitive resource sites (i.e., the river, riverine wetland, native trees, elderberry shrubs, trees that support nests of special-status birds) to indicate these locations. The protected areas will be designated as environmentally sensitive areas and identified clearly on the construction plans. The fencing will be installed before construction activities are initiated and will be maintained throughout the construction period. The following paragraph will be included in the construction specifications:

> The contractor's attention is directed to the areas designated as "environmentally sensitive areas." These areas are protected, and no entry by the contractor for any purpose will be allowed unless specifically authorized in writing by the City of Reedley. The contractor will take measures to ensure that his/her forces do not enter or disturb these areas, including giving written notice to employees and subcontractors. Vehicle operation, material and equipment storage, and other surface-disturbing activities are prohibited within the fenced environmentally sensitive areas.

Temporary fences will be installed around the environmentally sensitive areas as one of the first orders of work. Temporary fences will be furnished, constructed, maintained, and removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. The fencing will be commercial-quality woven polypropylene, orange in color, and at least 4 feet high (Tensor Polygrid or equivalent). The fencing will be tightly strung on posts set at maximum intervals of 10 feet.

*Retain a Biological Monitor to Conduct Weekly Visits during Construction in or near the Kings River*

The City of Reedley will retain a biologist to conduct weekly construction monitoring in and adjacent to the Kings River. The biological monitor will assist the construction crew as needed to comply with all project implementation restrictions and guidelines. The biological monitor also will be responsible for ensuring that the contractor maintains the staked and flagged perimeters of the construction area and staging areas adjacent to sensitive biological resources.

*Avoid and Minimize Potential Indirect Disturbance of Riparian Communities*

To the extent possible, the City of Reedley will avoid and minimize potential indirect disturbance of riparian communities by implementing the following measures.

- The potential for long-term loss of riparian vegetation will be minimized by trimming vegetation rather than removing entire trees or shrubs. Trees or shrubs that need to be trimmed will be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting will be limited to the minimum area necessary within the construction zone. Cutting will be allowed only in areas that do not provide habitat for sensitive species. To protect nesting migratory birds, the City of Reedley will not allow pruning or removal of woody riparian vegetation between March 1 and August 15 without a preconstruction nesting season survey to determine if active migratory bird nests are present (See section 4.4.3 for specifics on survey requirements and impact avoidance buffers).
- A certified arborist will be retained to perform any necessary pruning or root cutting of riparian trees.
- The areas that undergo vegetative pruning and tree removal will be inspected immediately before construction, immediately after construction, and 1 year after construction to determine the amount of existing vegetative cover, cover that has been removed, and cover that resprouts. If after 1 year these areas have not resprouted sufficiently to return the cover to the pre-project level, the City of Reedley or its contractor will replant the areas with the same species to reestablish the cover to the pre-project condition.

Work in riparian areas will be conducted between June 1 and October 1, and disturbed areas will be stabilized with erosion control measures before October 1.

#### *4.2.1.3 Project Impacts—Proposed Project*

Construction of the proposed project would result in the permanent loss of approximately 0.13 acre of riparian woodland within the project footprint (Figure 3-1). The permanent impact area is anticipated to include two valley oaks on the northeast bank.

Indirect impacts on approximately 2.33 acres of riparian woodland vegetation could occur from adjacent construction activity. Riparian vegetation is adjacent to the construction area but would not be removed for construction; however, it could sustain damage from equipment. This indirect impact would include effects within the driplines of several valley oak saplings and small trees and up to six mature native trees, including two mature valley oaks, one cottonwood, and three willows. Implementation of the avoidance and minimization measures would protect trees and avoid this potential impact.

State and federal agencies would require avoidance, minimization, and compensatory mitigation for the loss of riparian habitat. The loss or disturbance of riparian woodland vegetation is considered adverse because the vegetation provides a variety of important ecological functions and values.

#### 4.2.1.4 Project Impacts—Project Alternative

The project alternative would have an impact on riparian forest similar to that described for the proposed project. A smaller area would be affected due to the reduced project footprint, particularly on the south side of the existing bridge. Compensatory mitigation, discussed below, would be required for the area affected by the Project Alternative.

#### 4.2.1.5 Compensatory Mitigation

*Mitigation Measure BIO-1: Compensate for Permanent Loss of Riparian Vegetation*

The City of Reedley will compensate for the permanent loss of riparian vegetation at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre permanently affected). This ratio will be confirmed through coordination with state and federal agencies as part of the permitting process for the proposed project. Compensation in this area could be easily achieved through on-site enhancement of 0.13 acre within and adjacent to the study area. The riparian area on the southwest side of the existing bridge could be enhanced by planting native woody species, including valley oak, Fremont's cottonwood, arroyo willow, and black willow or other readily establishing native riparian species.

Plantings will consist of cuttings taken from local plants or plants grown from local material obtained from the nearby Kings River riparian corridor. Plantings will be monitored annually for 3 years or as required in the project permits. A minimum of 75% of the plantings will survive at the end of the monitoring period. If this survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated until the survival criterion is met.

#### 4.2.1.6 Cumulative Impacts

Cumulative impacts on riparian vegetation would result from construction of other general development projects in Fresno County. Construction of the proposed project would add to the cumulative loss of riparian habitats. However, with implementation of the mitigation measures prescribed for minimizing impacts and compensating for remaining impacts, the proposed project would most likely not have a cumulatively adverse effect on riparian habitats.

### 4.2.2 Riverine Wetland

#### 4.2.2.1 Survey Results

One riverine wetland was identified in the study area. It is situated in a swale-like depression on an undeveloped stream terrace on the western side of the Kings River channel (Jones & Stokes 2007, see Appendix C). It is dominated by herbaceous hydrophytes, and given its geomorphic position, it appears to be sustained largely by shallow groundwater and occasional overbank flows from the Kings River. The swale-like depression that contains the wetland extends north of the study area and may represent the remnant of a secondary floodplain channel.

#### 4.2.2.2 Avoidance and Minimization Efforts

Implementation of the avoidance and minimization measures described under Section 4.2.1, Discussion of Natural Community Riparian Forest, and the following avoidance and minimization measure would ensure that the proposed project avoids direct effects and minimizes indirect effects on riverine wetland habitat adjacent to the construction area.

*Avoid and Minimize Potential Indirect Disturbance of the Riverine Wetland*

The City of Reedley will minimize the potential for indirect disturbance of the riverine wetland in the study area by prohibiting the movement of vehicles and equipment in the wetland. All river access by vehicle will avoid the wetland. The potential for sedimentation in the wetland will be avoided by prohibiting the removal of vegetation upslope of the wetland.

#### *4.2.2.3 Project Impacts*

Regardless of build alternative, the riverine wetland could be indirectly affected by the movement of vehicles through the wetland or the removal of vegetation during construction in the adjacent upslope area. Implementation of avoidance and minimization measures is expected to prevent this indirect impact. No additional mitigation is proposed.

#### *4.2.2.4 Cumulative Impacts*

Cumulative impacts on riverine wetlands would result from construction of other general development projects in Fresno County. Construction of the proposed project would not add to the cumulative loss of these habitats because the riverine wetland will be avoided.

### 4.2.3 Open Water

#### *4.2.3.1 Survey Results*

The Manning Avenue Bridge crosses the Kings River. Within the study area, a portion of the river is open water. Two islands that support riparian vegetation occur within the river, and open water flows on either side of and between the islands. The OHWM of the Kings River is at approximately 290 feet (Jones & Stokes 2007).

#### *4.2.3.2 Avoidance and Minimization Efforts*

Implementation of the avoidance and minimization measures described under Section 4.2.1, Discussion of Natural Community Riparian Forest, and the following avoidance and measures would ensure that the proposed project avoids direct effects and minimizes indirect effects on open water habitat adjacent to the construction area.

*Protect Water Quality and Prevent Erosion in the Kings River*

To protect water quality in the Kings River, the City of Reedley will implement the following best management practices (BMPs) before and during construction.

- All earthwork or foundation activities in the river will be limited to the low-flow period, as much as is feasible.
- Equipment used in and around the river will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance, staging, and materials storage will occur at least 300 feet from the river. Any necessary equipment washing will occur where the water cannot flow into the river channel.
- Any surplus concrete rubble, asphalt, or other rubble from construction will be taken to an approved landfill.
- An erosion control plan will be prepared and implemented for the proposed project. It will include the following provisions and protocols:

  - Discharges from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the RWQCB.
  - Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. The contractor will surround all stockpile areas with a filtering fabric fence and interceptor dike.
  - Erosion control measures will be applied throughout construction of the proposed project. The stormwater pollution prevention plan (SWPPP) for the project will detail the applications and types of measures and the allowable exposure of unprotected soils.
  - Soil exposure will be minimized through the use of temporary BMPs, groundcover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid runoff. Paved streets will be swept daily following construction activities.
  - The contractor will conduct periodic maintenance of erosion and sediment control measures.
  - All temporary erosion and sediment control measures will be removed after the working area is stabilized or as directed by the engineer.
  - An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction.
- Sandbagged silt fences will be installed both upstream and downstream of the construction site. Any accumulated sediment will be removed and trucked to an approved landfill or disposal site.

*Obtain Required Permits, Authorizations, Certifications, and Agreements*

Before construction, the City of Reedley will obtain all necessary regulatory authorizations as listed in Section 5.1. All conditions that are attached to the state and federal permits will be implemented as part of the project. The conditions will be identified clearly in the construction plans and specifications and monitored during and after construction to ensure compliance.

#### *4.2.3.3 Project Impacts—Proposed Project*

Construction of the proposed bridge replacement project would involve the placement of fill and installation of culverts during construction to divert streamflow around new foundations; this could include placement of fill to widen the existing island for foundation installation. A total of six new foundations, each approximately 8 feet in diameter, will be placed within the Kings River channel for an estimated total of 402 square feet, or 0.01 acre, of permanent fill. Table 4-1 lists the extent of direct impacts (fill) anticipated in the Kings River based on the proposed bridge footing size (permanent fill) and the proposed extent of the culverts and falsework (temporary fill). For this analysis, temporary fill areas are assumed to include all of the area under the existing bridge.

Additional indirect impacts caused by sedimentation could occur in portions of the river outside the project footprint. The impact areas are preliminary, pending Corps verification of the

OHWM for the Kings River and the specific design of the culverts and falsework proposed for project construction.

**Table 4-1. Direct Impacts on the Kings River in the Study Area**

| Area of Temporary Fill (acres)[a] | Area of Permanent Fill (acres)[b] | Total Direct Impacts (Temporary and Permanent) |
|---|---|---|
| 0.57 | 0.01 | 0.58 acre |

[a] Includes temporary fill for culvert or island widening and falsework.

[b] Includes permanent fill for bridge structures.

Natural streams are considered waters of the United States and are protected under CWA Section 404. Placement of material in these areas, including culverts, falsework, substrate for island widening, and bridge foundations, would be considered placement of fill within waters of the United States. This activity would require Section 404 authorization from the Corps and CWA Section 401 water quality certification from the RWQCB.

An SAA from DFG would be required for construction activity within the Kings River and its floodplain, and a land lease agreement would be required from the State Lands Commission, (Young pers. comm.).

With implementation of the avoidance and minimization measures described in Section 4.1.1, Discussion of Natural Community Riparian Forest, and above, the proposed project would not result in indirect impacts on the river. Additional mitigation is proposed to compensate for the direct impacts on the Kings River.

#### *4.2.3.4 Project Impacts—Project Alternative*

The project alternative would have an impact on open water in the Kings River similar to that described for the proposed project. A smaller area would be affected due to the reduced project footprint for the single large-diameter pile, placement of rock slope protection around the existing footing, and concrete repairs to the piers. Compensatory mitigation, discussed below, would be required for the project alternative.

#### *4.2.3.5 Compensatory Mitigation*

*Mitigation Measure BIO-2: Compensate for Permanent and Temporary Loss of Open Water Habitat*

The City of Reedley will compensate for the permanent fill of other waters of the United States (a direct impact associated with bridge foundations) in the Kings River at a minimum ratio of 2:1 (2 acres restored or created for every 1 acre permanently affected). Because the proposed project will result in the permanent loss of 0.01 acre of other waters of the United States (Table 4-1), a minimum of 0.02 acre of compensation will be required. Compensation could be accomplished by restoring and/or enhancing riparian and in-stream habitats in the study area. Compensation for other waters of the United States will be in addition to and will follow the guidelines for riparian habitat compensation described in mitigation measure BIO-1.

The approximate 0.57 acre of the river that will be temporarily filled for placement of stream diversions and falsework during construction will be returned to original grade following

construction and will result in no permanent impacts. No additional mitigation is proposed for the temporarily filled areas in the Kings River.

#### *4.2.3.6 Cumulative Impacts*

Cumulative impacts on the Kings River and other open water habitat would result from construction of other general development projects in Fresno County. Construction of the proposed project would add to the cumulative loss of open water. However, with implementation of the mitigation measures above, the proposed project would most likely not have a cumulatively adverse effect on open water habitats.

## 4.3 Special-Status Plant Species

Sensitive plant species with the potential to occur in the project area were identified after a review of existing information and are listed in Table 3-3. No sensitive plant species have been previously recorded in the study area (California Natural Diversity Database 2007). A spring blooming-period survey of the study area was conducted on May 9, 2007, to determine whether any of these species were present, but none was found.

The nearest recorded occurrences of sensitive plant species include

- spiny-sepaled button-celery, 10 miles northeast of the study area;
- an observation of California satintail in 1933, estimated to be within 0.5 mile of the study area;
- an extirpated occurrence of San Joaquin Valley orcutt grass, approximately 5 miles northeast of the study area; and
- an extirpated occurrence of San Joaquin adobe sunburst, approximately 6.5 miles southeast of the study area.

No habitat for these species is present in the study area due to a lack of suitable plant communities or a lack of suitable soil types.

Given the lack of previously recorded occurrences, the negative results of the spring botanical field surveys conducted in the study area, and the degraded condition of the potential habitat for summer-blooming sensitive species, the botanist determined that the study area would not support summer-blooming sensitive species, and the project would not have an impact on sensitive plant species.

## 4.4 Special-Status Animal Species Occurrences

As described in Chapter 2, sensitive animal species that could potentially occur in the study area were identified after a review of existing information, coordination with agency personnel, and a biological field survey. Table 3-4 lists all sensitive wildlife species (including fish) that were identified during the prefield investigation with the potential to occur in the project area. After

biological field surveys were conducted and additional information was obtained from the resource agencies, the biologist determined that the following sensitive wildlife species could occur in or adjacent to the study area or may be affected by construction activities.

### 4.4.1 Valley Elderberry Longhorn Beetle

VELB is on the federal list of threatened species (45 FR 52803). The species occurs from as far south as Kern County to as far north as Shasta County (U.S. Fish and Wildlife Service 1999). The majority of specimens and recorded observations appear to be from the Sacramento/Davis area (Linsley and Chemsak 1972). VELB is closely associated with blue elderberry (*Sambucus mexicana*), an obligate host for beetle larvae. Blue elderberry is considered a typical riparian shrub (Roberts et al. 1977; Katibah et al. 1984; Warner and Hendrix 1984) in California**.** It is a hardy shrub that successfully grows in a variety of riparian habitat types.

The presence of exit holes in elderberry stems indicates previous use by VELB. Exit holes are cylindrical and approximately 0.25 inch in diameter. Exit holes can be found on stems that are at least 1 inch in diameter. On the stems, holes may be located from a few inches above the ground to about 9 to 10 feet above the ground (Barr 1991).

#### *4.4.1.1 Survey Results*

Numerous CNDDB (2007) records for VELB occur within 10 miles of the study area, the closest just under 1 mile from the study area. Suitable habitat for VELB (i.e., elderberry shrubs) was identified in the study area. An elderberry shrub survey was conducted for shrubs located within 100 feet of the construction area. The survey included a visual search of all shrubs containing stems measuring 1 inch in diameter or greater at ground level for exit holes, the location of the shrub (riparian vs. non-riparian), and a stem count of all stems measuring 1 inch in diameter or greater at ground level, specifically noting the size class of each stem (i.e., stems between 1 and 3 inches, 3 and 5 inches, and more than 5 inches). Additionally, all shrubs within 100 feet of the construction area were mapped on an aerial photograph of the study area. Tables 4-2 and 4-3 below contain the results of the elderberry shrub survey.

A total of 12 elderberry shrubs are located within the direct impact area (within 20 feet) of the project construction area and would require removal. A total of 14 stems measuring 1 inch in diameter or greater at ground level were counted among the 12 elderberry shrubs (Table 4-2). All 12 of these shrubs are located within the Kings River riparian corridor (Figure 3-2). No VELB exit holes were observed on any of these stems.

Thirty additional elderberry shrubs are located more than 20 feet from the direct impact area but within approximately 100 feet of project construction activities. A total of 37 stems measuring 1 inch in diameter or greater at ground level were counted among the 30 elderberry shrubs (Table 4-3). All of these shrubs are located within riparian habitat. No VELB exit holes were observed on any of these stems. One elderberry clump is also located more than 20 feet from the direct impact area but within approximately 100 feet of project construction activities. An elderberry clump is defined as a large group of shoots/stems/trunks where individual shrubs cannot be identified. This elderberry clump is located in upland habitat and contains a total of five stems measuring 1 inch in diameter or greater at ground level. No VELB exit holes were observed on any of these stems.

**Table 4-2. Results of the Valley Elderberry Longhorn Beetle Survey within Direct Impact Area**

| Elderberry Shrub/Cluster Number | Number of Stems > 1 Inch and < 3 Inches | Number of Stems > 3 Inches and < 5 Inches | Number of Stems > 5 Inches | Total Number of Stems | Estimated Height (feet) |
|---|---|---|---|---|---|
| **Riparian** | | | | | |
| EB 1 | | | 1 | 1 | 15 |
| EB 2 | 1 | | | 1 | 3 |
| EB 3 | 2 | | | 2 | 3 |
| EB 4 | | 1 | | 1 | 15 |
| EB 5 | | | 1 | 1 | 20 |
| EB 6 | | 1 | | 1 | 3 |
| EB 7 | | 1 | | 1 | 5 |
| EB 8 | | | 1 | 1 | 10 |
| EB 9 | | 2 | | 2 | 10 |
| EB 10 | 1 | | | 1 | 8 |
| EB 11 | 1 | | | 1 | 3 |
| EB 12 | 1 | | | 1 | 10 |
| Total | 6 | 5 | 3 | 14 | N/A |

**Table 4-3. Results of the Valley Elderberry Longhorn Beetle Survey within Potential Indirect Impact Area (within 100 feet of project construction activities)**

| Elderberry Shrub/Cluster Number | Number of Stems > 1 Inch and < 3 Inches | Number of Stems > 3 Inches and < 5 Inches | Number of Stems > 5 Inches | Total Number of Stems | Estimated Height (feet) |
|---|---|---|---|---|---|
| **Riparian** | | | | | |
| EB 13 | | | 1 | 1 | 20 |
| EB 14 | | | 1 | 1 | 25 |
| EB 15 | 1 | 1 | | 2 | 15 |
| EB 16 | | | 1 | 1 | 15 |
| EB 17 | 2 | | | 2 | 10 |
| EB 18 | | 1 | | 1 | 8 |
| EB 19 | | 1 | | 1 | 8 |
| EB 20 | 1 | | | 1 | 7 |
| EB 21 | | | 1 | 1 | 10 |
| EB 22 | | 1 | | 1 | 8 |
| EB 23 | | | 1 | 1 | 10 |
| EB 24 | | | 1 | 1 | 10 |
| EB 25 | 1 | | | 1 | 8 |
| EB 26 | 1 | | | 1 | 8 |
| EB 27 | 1 | | | 1 | 8 |
| EB 28 | | | 1 | 1 | 10 |
| EB 29 | | | 1 | 1 | 12 |
| EB 30 | 1 | | | 1 | 3 |
| EB 31 | 1 | | | 1 | 4 |
| EB 32 | | | 1 | 1 | 22 |
| EB 33 | | | 1 | 1 | 25 |
| EB 34 | 1 | | | 1 | 8 |
| EB 35 | | | 1 | 1 | 20 |
| EB 36 | | | 1 | 1 | 25 |
| EB 37 | 1 | | 1 | 2 | 15 |
| EB 38 | | 1 | 1 | 2 | 15 |
| EB 39 | | | 1 | 2 | 17 |
| EB 40 | 2 | 1 | | 3 | 8 |
| EB 41 | 1 | | | 1 | 8 |
| EB 42 | 1 | | | 1 | 8 |
| Subtotal | 15 | 6 | 15 | 37 | |
| **Nonriparian** | | | | | |
| EB 43 (clump) | 1 | 2 | 2 | 5 | 20 |
| Subtotal | 1 | 2 | 2 | 5 | N/A |
| Total | 22 | 13 | 20 | 56 | N/A |

### *4.4.1.2 Avoidance and Minimization Efforts*

*Conduct a Biological Resources Education Program for Construction Crews*

A qualified biologist, under contract to the City, will conduct an environmental education program for construction employees on the importance of on-site biological resources, including special-status species. The environmental education program will be provided to all construction personnel to brief them on the need to avoid impacts on VELB and the penalties for not complying with biological mitigation requirements. The biologist will inform all construction

personnel about the life history of VELB, the importance of elderberry shrubs as habitat for VELB, and the terms and conditions of the biological opinion. Proof of this instruction will be submitted to the USFWS Sacramento Field Office.

The program will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive species during project implementation. The crew foreman will be responsible for ensuring that crewmembers adhere to the guidelines and restrictions. Educational programs will be conducted for appropriate new personnel as they are brought on the job during the construction period. Restrictions and guidelines that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 10-mile-per-hour speed limit on unpaved roads during travel in the study area.
- Project-related vehicles and construction equipment will restrict off-road travel to the designated construction area.
- All food-related trash will be disposed of in closed containers and removed from the study area at least once a week during the construction period. Construction personnel will not feed or otherwise attract fish or wildlife to the study area.
- No pets or firearms will be allowed in the study area.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas.
- Any worker who inadvertently injures or kills a special-status species or finds one dead, injured, or entrapped will immediately report the incident to the biological monitor. The monitor will immediately notify Caltrans, which will provide verbal notification to the USFWS Endangered Species Office and the local DFG warden or biologist within 3 working days. Caltrans will follow up with written notification to USFWS and DFG within 5 working days. The biologist will also notify USFWS of any unanticipated harm to VELB or elderberry shrubs associated with the proposed project. All observations of VELB (live, injured, or dead) or fresh beetle exit holes will be recorded on CNDDB field sheets and sent to DFG.

### *Fence Elderberry Shrubs to Be Protected*

A qualified biologist, under contract to the City, will mark the elderberry shrubs that will be protected during construction. Thirty-one elderberry shrubs (EB 13–43) within 100 feet of the direct impact area will be protected by a buffer area and barrier fencing (Figure 3-2). Elderberry clumps/shrubs outside of this buffer area will not be fenced because they will be located well outside the construction area; no construction activities will occur outside the direct impact area. Elderberry shrubs 13–43 will be protected with a minimum 20-foot buffer from the dripline of each shrub. No construction activities will be permitted within the buffer zone, other than those activities necessary to erect the fencing. Signs will be posted every 50 feet along the perimeter of the buffer area fencing. The signs will contain the following information:

*This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.*

Temporary fences will be installed around the elderberry shrubs as the first order of work. Temporary fences will be furnished, constructed, maintained, and later removed as shown on the plans, as specified in the special provisions, and as directed by the project engineer. Temporary fencing will be 4 feet high and made of commercial-quality woven polypropylene, orange in color.

*Inspect Buffer Area Fences during Construction*

A qualified biologist, under contract to the City, will inspect the buffer area fences around elderberry shrubs/clumps weekly during ground-disturbing activities and monthly after ground-disturbing activities until project construction is complete or until the fences are removed, as approved by the biological monitor and the resident engineer. The biological monitor will be responsible for ensuring that the contractor maintains the buffer area fences around elderberry shrubs in the study area and the 100-foot buffer area. Biological inspection reports will be provided to the City, Caltrans, and USFWS.

*Water Down Construction Areas to Control Dust in the Vicinity of Elderberry Shrubs*

The City, or its contractor, will ensure that the study area will be watered down as necessary to prevent dirt from becoming airborne and accumulating on elderberry shrubs in and adjacent to the study area. Dust control is a standard item required of contractors during highway construction.

#### *4.4.1.3 Project Impacts—Proposed Project*

There are 12 elderberry shrubs in the direct impact area that will be removed prior to construction. Thirty-one additional shrubs (EB 13–43) are located outside of the direct impact area but within 100 feet of this area. Elderberry shrubs located within 100 feet of project construction are considered by USFWS to be susceptible to indirect effects resulting from noise or dust. These shrubs are unlikely to be indirectly affected by project construction due to the following reasons.

- The study area will be watered down, as necessary, to prevent dirt from becoming airborne and accumulating on elderberry shrubs in and adjacent to the study area.
- Shrubs are located in a dense riparian forest and would most likely not be exposed to dust created by the project.
- Shrubs are located near a road with high levels of traffic associated with existing moderate to high levels of noise.
- No work will occur within the driplines of these shrubs.
- Project construction and associated activities will occur only within designated areas and will remain outside of the “no disturbance” buffer.

Table 4-4 lists impacts on elderberry shrubs within and adjacent to the study area.

**Table 4-4. Type of Impact on Elderberry Shrubs within and adjacent to the Study Area**

| Elderberry Shrub/Cluster Number | Type of Impact |
|---|---|
| **Riparian Habitat within Construction Area** | |
| EB 1–EB 12 | Direct |
| **Riparian Habitat within 100-Foot Buffer Outside the Construction Area** | |
| EB 13–EB 42 | None |
| **Nonriparian Habitat within 100-Foot Buffer Outside the Construction Area** | |
| EB 43 | None |

#### *4.4.1.4 Project Impacts—Project Alternative*

The project alternative would have an impact on elderberry shrubs similar to that described for the proposed project. The project alternative has a slightly smaller construction footprint on the northern side, and therefore, fewer shrubs would need to be removed under the project alternative compared to the proposed project. Avoidance and minimization measures and compensatory mitigation requirements would be comparable to those required under the proposed project.

#### *4.4.1.5 Compensation Mitigation*

*Mitigation Measure BIO-3: Compensate for Direct and Indirect Effects on Valley Elderberry Longhorn Beetle Habitat*

Several of the 12 elderberry shrubs within the direct impact area are in poor condition (high amount of dead growth and severely leaning) and would most likely not survive transplantation. These shrubs will be removed prior to construction, and as directed by Jeff Jorgenson of USFWS in a October 24, 2007 phone conversation, unhealthy shrubs that would not be directly impacted by physical damaged due to construction but would be in close proximity to construction, such that their driplines would fall within the construction area, could be left alone and USFWS would have to approve impeding on the typical minimum protection barrier of 20 feet for these shrubs. Unhealthy shrubs that would be directly impacted by construction should be attempted to be transplanted to a USFWS-approved conservation area or mitigation bank (e.g., French Camp Conservation Bank) and their survival monitored. Elderberry seedlings or cuttings and associated native species will also be planted in the conservation area or mitigation bank.

The relocation of the elderberry shrubs will be conducted according to the USFWS-approved procedures outlined in the USFWS guidelines (U.S. Fish and Wildlife Service 1999). USFWS will be provided with a map and written details identifying the conservation area or mitigation bank before the mitigation program is initiated. The City and Caltrans must receive approval from USFWS that the conservation area or mitigation bank is acceptable. Healthy elderberry shrubs within the study area that cannot be avoided will be transplanted during the plant's dormant phase (November through the first 2 weeks of February). A qualified biological monitor will remain on-site while the shrubs are being transplanted.

Evidence of VELB occurrence in the conservation area or mitigation bank, the condition of the elderberry shrubs in the conservation area or mitigation bank, and the general condition of the conservation area itself will be monitored over a period of 10 consecutive years or for 7 years over a 15-year period from the date of transplantation. The City will be responsible for funding

and providing monitoring reports to Caltrans and USFWS in each of the years in which a monitoring report is required. This could be accomplished by purchasing mitigation credits at full-service USFWS-approved mitigation bank. As specified in the guidelines, the report will include information on timing and rate of irrigation, growth rates, and survival rates and mortality. To meet the success criteria specified in the guidelines, a minimum survival rate of 60% of the original number of elderberry replacement plantings and associated native plants must be maintained throughout the monitoring period. Within one year of discovery that survival has dropped below 60%, the applicant must replace failed plantings to bring survival above this level. The USFWS would then make a determination as to the applicant's replacement responsibilities.

Twelve elderberry shrubs will be removed as part of bridge construction, and shrubs will be transplanted as described above. In addition to transplanting shrubs, the guidelines require that each elderberry stem measuring 1 inch or greater in diameter at ground level that is directly or indirectly affected to be replaced in a conservation area or mitigation bank (e.g., French Camp Conservation Bank) with elderberry seedlings or cuttings at ratios between 1:1 and 8:1. The ratio used is based on whether or not the shrub is located in riparian or nonriparian habitat, the diameters of the elderberry stems, and whether or not VELB exit holes are present. Replacement of the bridge will directly affect 12 elderberry shrubs having a combined total of 14 stems measuring 1 inch or more in diameter. A total of 39 elderberry seedlings or cuttings would be planted at the conservation area or mitigation bank (Table 4-5). Elderberry cuttings or seedlings and native plants will be obtained from local sources or from an approved plant donor site.

A mix of native plants associated with the elderberry shrubs at the project site will be planted in the conservation area or mitigation bank at a ratio of 1:1 or 2:1. The ratio used depends on whether or not the transplanted shrub contains VELB exit holes. A mixture of native grasses and forbs from local stock will also be planted along with the native trees. The conservation area or mitigation bank will be at least 1.65 acre in size to accommodate the 12 elderberry shrubs, 39 elderberry cuttings or seedlings, and 39 native plants. The conservation area or mitigation bank in which the transplanted elderberry shrubs and seedlings are planted will be protected in perpetuity as habitat for VELB.

**Table 4-5. Required Compensation for VELB**

| Habitat | Stem Diameter | Number of Stems | Exit Holes (Y/N) | Seedling Ratio | Native Plant Ratio | Total Seedlings | Total Native Plants |
|---|---|---|---|---|---|---|---|
| Riparian | Stems $\geq$ 1 inch to $\leq$ 3 inches | 6 | N | 2:1 | 1:1 | 12 | 12 |
| | Stems > 3 inches to < 5 inches | 5 | N | 3:1 | 1:1 | 15 | 15 |
| | Stems $\geq$ 5 inches | 3 | N | 4:1 | 1:1 | 12 | 12 |
| Total | | 14 | None | NA | NA | 39 | 39 |

#### *4.4.1.6 Cumulative Effects*

Avoidance/minimization and compensation measures proposed for VELB would reduce the potential for cumulative impacts to occur. No cumulative impacts are expected.

### 4.4.2 Western Pond Turtle

The western pond turtle is a state species of special concern. The western pond turtle is thoroughly aquatic, preferring the quiet waters of ponds, reservoirs, and sluggish streams (Stebbins 1985). The species occurs in a wide range of both permanent and intermittent aquatic environments (Jennings et al. 1992). Western pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris. Western pond turtles move to upland areas adjacent to watercourses or up to 0.25 mile away to deposit eggs and to overwinter (Jennings and Hayes 1994).

#### *4.4.2.1 Survey Results*

No western pond turtles or pond turtle nests were observed during the field visit. The only record for western pond turtle within a 10-mile radius of the study area was reported in Wahtoke Creek for an unknown number of pond turtles on an unknown date, approximately 10 miles northwest of the study area (California Natural Diversity Database 2007). Western pond turtle has a moderate potential to occur within the Kings River in the study area. Potential nesting and overwintering habitat is present in the grassland portion of the study area.

#### *4.4.2.2 Avoidance and Minimization Efforts*

*Conduct Preconstruction Surveys for Western Pond Turtle and Construct Exclusion Fencing, If Needed*

In April or May, before construction, a qualified biologist, under contract to the City of Reedley, will conduct a survey for western pond turtles along the Kings River. The survey will encompass the study area and an area 0.25 mile upstream and downstream of this area. The purpose of this survey is to determine whether turtles are using the creek during the period when they are most likely to be observed. If turtles are observed, "a" and "b" below will be implemented. If turtles are not observed, only "b" will be implemented.

a. If western pond turtles are observed during the spring survey, fences will be constructed upstream and downstream of the study area to prevent turtles from entering the construction area. The fences will be constructed 150 feet beyond the limit of construction or attached to right-of-way fencing. The fences will be perpendicular to the river and will extend 200 feet from the center of the river on each side. Turtles will be moved downstream of the study area, outside the barrier fences, by a qualified biologist in accordance with an MOU from DFG before construction begins. Turtles will be excluded from the construction area between July and October to prevent them from seeking hibernation sites within the construction area. If construction takes place over two seasons, the fencing will be removed at the end of the first season and replaced the following season. If construction takes place over one season, the fencing will be left in place the entire time.

b. Before the Kings River is dewatered and there is any activity within the flowing river, a qualified biologist will conduct a preconstruction survey for western pond turtles within the study area. This survey will be conducted 24 hours before construction activities begin. If a turtle is found in the construction area, the biologist will try to passively move the turtle downstream of the construction area or to outside the barrier fence, if constructed (see "a" above). If barrier fences have not been installed, the biologist will return to the construction site the following day to ensure that the turtle has not moved back into the construction area.

#### 4.4.2.3 Project Impacts—Proposed Project

The proposed project would result in the following impacts.

- Permanent loss of approximately 0.01 acre of aquatic habitat for western pond turtles. This habitat would be lost as a result of construction of six new bridge foundations within the Kings River OHWM.
- A minimal amount of suitable upland habitat, including riparian and grassland habitats, would be permanently remove adjacent to the existing bridge within the footprint of the new bridge outside the Kings River OHWM. Disturbance within the construction zone for construction staging and temporary access roads would also be minimal and all disturbed areas would be available to turtles in the long term because they would be revegetated after the project completion.

Impacts on western pond turtle are considered minimal because the amount of aquatic habitat that would be affected would be very small, and impacts on upland habitat would be temporary. In addition, measures would be implemented to limit disturbance to the Kings River and avoid and minimize injury or mortality of turtles. Therefore, the proposed project would not substantially affect western pond turtles (if they occur) in the study area.

#### 4.4.2.4 Project Impacts—Project Alternative

The project alternative would have an impact on the Kings River open water and riparian corridor similar to that described for the proposed project. A smaller area would be affected due to the reduced project footprint for the single large-diameter pile, placement of rock slope protection around the existing footing, and concrete repairs to the piers. Avoidance and minimization measures would be comparable to those required under the proposed project. No compensatory mitigation would be required for this species.

#### 4.4.2.5 Compensation Mitigation

No compensatory mitigation for western pond turtle is required.

#### 4.4.2.6 Cumulative Effects

Because impacts on habitat for western pond turtle are minor and avoidance and minimization measures would avoid the loss of turtles, no cumulative impacts are anticipated to occur.

### 4.4.3 White-Tailed Kite, Swainson's Hawk, and Non-Sensitive Nesting Migratory Birds, Including Raptors

Two sensitive birds, white-tailed kite and Swainson's hawk, and non-sensitive migratory birds (including raptors) could nest in and adjacent to the study area.

White-tailed kite is a fully protected species under California Fish and Game Code Section 3511. The species has a restricted distribution in the United States, occurring only in California, western Oregon, and along the Texas coast (American Ornithologists' Union 1983). The species is fairly common in California's Central Valley lowlands (Zeiner et al. 1990a). White-tailed kites nest in open canopy forests, especially cismontane forests; they are also known to nest in riparian areas. Nests typically occur near agricultural lands where foraging most often occurs. Foraging also occurs in open grasslands, meadows, and emergent wetlands. White-tailed kites

use dense trees for cover. Breeding occurs from February to October, with peak activity from May through August (Zeiner et al. 1990a).

Swainson's hawk is a state-listed threatened species. Swainson's hawks migrate annually from wintering areas as far south as South America to breeding locations in northwestern Canada, the western United States, and Mexico. In California, the distribution includes the Central Valley, the Klamath Basin, the northeastern plateau, Lassen County, and the Mojave Desert (Zeiner et al. 1990a). Swainson's hawks nest in the Central Valley in large trees in riparian corridors, oak savannah, and juniper-sage flats in open tree stands. This species is also typically found nesting adjacent to agricultural fields. Swainson's hawks breed from late March to late August, with peak activity from late May through July. In the Central Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (California Department of Fish and Game 1994).

The breeding season for most migratory birds is generally from February 15 to September 1. The occupied nests and the eggs of migratory birds, including raptors, are protected by federal and state laws, including the MBTA and DFG codes 3503 and 3503.5.

#### *4.4.3.1 Survey Results*

Cliff swallows were observed nesting under the Manning Avenue Bridge during the May 2007 field visit. Nesting habitat for sensitive and non-sensitive migratory bird species is present in trees and shrubs within and adjacent to the study area. Trees and shrubs within and adjacent to the study area were examined for nests during the May and June 2007 field visits but no nests were observed.

#### *4.4.3.2 Avoidance and Minimization Efforts*

*Remove Trees and Shrubs during the Nonbreeding Season or Conduct Preconstruction Nest Surveys*

To avoid impacts on active sensitive and non-sensitive migratory bird nests protected under the MBTA and CDFG code, construction activities, including tree (and shrub) removal activities, will be conducted during the nonbreeding season for migratory birds (generally September 1 through February 15) or after a qualified biologist determines that fledglings have left the nest. If construction activities will be conducted before September 1 or after February 15 (that is, during the breeding season), a qualified biologist will be retained to survey for nesting birds in all trees (and shrubs) that will be removed and any tree (or shrub) located within 500 feet (0.25 mile for Swainson's hawk) of construction activities, including grading. The nesting bird survey will be conducted no more than 48 hours before tree (and shrub) removal activities. If the biologist determines that the area surveyed does not contain active nests, tree (and shrub) removal activities can commence without any further mitigation. If active nests are found, construction will not occur until nesting activities have ceased (after a qualified biologist determines that fledglings have left the nest).

If a Swainson's hawk nest site is found, consultation with the DFG will be required to ensure that project initiation will not result in nest disturbance. Removal of Swainson's hawk nest trees will be avoided. A "no-disturbance" buffer will be established for an active nest that is located on or within 0.25 mile of the project area for the time the nest remains active. No construction will be allowed within this exclusion area without consultation with DFG. A qualified wildlife biologist

will monitor the nest site at least once a week to ensure that the nest site is not disturbed and the buffer is maintained. If the nest tree cannot be avoided, the nest tree must be removed when nests are unoccupied (between September 1 and February 15), with consent from DFG.

#### *4.4.3.3 Project Impacts—Proposed Project*

Implementation of the proposed project could affect sensitive and non-sensitive nesting migratory birds, including raptors, if construction activities remove or otherwise disturb occupied nests during the breeding season. Construction activities during the breeding season that result in the death of young or loss of reproductive potential would violate MBTA and DFG codes 3503 and 3503.5. Implementation of the avoidance and minimization measures identified above would ensure that the proposed project would not result in the loss or disturbance of migratory bird and raptor nests, eggs, or young.

#### *4.4.3.4 Project Impacts—Project Alternative*

The project alternative would involve the removal and replacement of only the northern half of the bridge and, therefore, would result in a smaller construction footprint and a slighter smaller number of trees that would need to be removed. Under the Project Alternative, construction activities could remove or otherwise disturb occupied nests during the breeding season, which could result in potential impacts on nesting birds. The same types of avoidance and minimization measures required for the proposed project would be required for the Project Alternative. Therefore, comparing the project alternative to the proposed project, there is no difference in the impacts on nesting sensitive birds and non-sensitive migratory birds.

#### *4.4.3.5 Compensation Mitigation*

No compensatory mitigation is recommended.

#### *4.4.3.6 Cumulative Effects*

Because the proposed project would avoid removal of occupied migratory bird nests, no cumulative impacts are anticipated.

### 4.4.4 Swallows

Cliff swallows and barn swallows are species that frequently build mud nests on the undersides of artificial structures such as bridges. These species winter in South America and return to California to breed in February. Swallows nest from April to August and migrate south in September and October (Zeiner et al. 1990a).

Cliff swallows and barn swallows are not considered sensitive wildlife species; however, their occupied nests and eggs are protected by the MBTA (50 CFR 10 and 21) and DFG codes 3503 and 3503.5.

#### *4.4.4.1 Survey Results*

During the site visit, cliff swallows were observed nesting under the Manning Avenue Bridge.

#### 4.4.4.2 Avoidance and Minimization Efforts

*Avoid Construction Activities that Could Disturb Nesting Swallows*

To the extent possible, Caltrans, the City, or the contractor will limit construction activities that could potentially disturb nesting swallows to the period outside the breeding season for this species (the nonbreeding season is August 1 to March 1).

If construction activities are to occur during the swallows' breeding season, the following measures will be implemented:

- Hire a qualified biologist to inspect the underside of the bridge during the swallows' nonbreeding season. Nests that are abandoned may be removed during this time only. To avoid damaging active nests, nests must be removed before the breeding season occurs (March 1). A permit from DFG and USFWS is required if active nests are to be removed.
- After nests are removed, cover the underside of the viaduct with a 0.5- to 0.75-inch-mesh net, poultry wire, or other DFG-approved swallow exclusion device. All devices will be installed before March 1. The device must be anchored so swallows cannot attach their nests to the bridge through gaps in the device. An alternative to netting is to continually hose down inactive nests until construction occurs. If netting of the viaduct does not occur by March 1 and swallows colonize the bridge, modifications to these structures will not begin before August 1 or until the young have fledged and all nest use has been completed.

If steps are taken to prevent swallows from constructing new nests, work can proceed at any time of the year, notwithstanding other restrictions specified in the mitigation measures identified above and in City ordinances.

#### 4.4.4.3 Project Impacts—Proposed Project

Vibrations, noise, and activities associated with bridge modifications could disturb nesting swallows. Swallows could be affected by the proposed project if construction activities occur between March 1 and September 1 (the nesting season). Implementation of the avoidance and minimization measures identified above would ensure that the proposed project would not result in the loss or disturbance of swallow nests, eggs, or young.

#### 4.4.4.4 Project Impacts—Project Alternative

The project alternative would involve the removal and replacement of the northern half of the bridge. The northwest portion of the bridge is being used by swallows for nesting and would therefore be removed as part of this alternative just as it would under the proposed project. Implementation of the same types of avoidance and minimization measures required for the proposed project would be required for the project alternative. Therefore, comparing the project alternative to the proposed project, there is no difference in the impacts on nesting swallows.

#### 4.4.4.5 Compensation Mitigation

No compensatory mitigation for nesting swallows is recommended.

#### 4.4.4.6 Cumulative Effects

Because the proposed project would avoid disturbance to active swallow nests, no cumulative impacts are anticipated.

### 4.4.5 Roosting Bats

Bats often use bridge structures as day or night roosts. Day roosts are areas that provide protection from predation and microclimate conditions favorable for roosting and rearing young. Day roosts are most commonly found in bridge expansion joints or other crevices. In contrast, night roosts are often found in open areas between bridge support beams that are protected from the wind. These areas provide shelter for bats while they rest and digest their food between nightly feeding bouts (Erickson 2002).

Bats may use bridges during any time of the year, but their presence is usually associated with specific seasonal activities. These include migration (spring and fall), maternity colonies (spring and summer), day and night shelter roosting (spring, summer, fall), and hibernation (winter). (Erickson 2002)

Bat species commonly known to roost on bridges in Fresno County include Mexican free-tailed bats, pallid bat, big brown bat, and Yuma myotis (Erickson 2002). Although common bats species do not have the same protection as special-status bat species, maternal roosts are afforded protection by DFG due to the sensitivity of these roosts to disturbance. Additionally, roost loss and disturbance are thought to be the most important known causes of bat decline.

Two sensitive bat species, pallid bat and greater western mastiff bat, are documented to roost within approximately 10 miles of the study area (California Natural Diversity Database 2007). Pallid bats are commonly known to use bridges in California for roosting habitat; there are no documented occurrences of greater western mastiff bats rooting on bridges in California (Erickson 2002). There is however the potential for either of these species to roost under the Manning Avenue Bridge in the study area. Both the pallid bat and the greater western mastiff bat are state species of special concern.

Pallid bat is found throughout most of California at low to middle elevations (up to 6,000 feet) and is a yearlong resident in most of the range. Pallid bats are found in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The species is most common in open, dry habitats with rocky areas for roosting. Pallid bats forage mostly over open ground surfaces, eating a wide variety of insects and arachnids. Daytime roost sites include caves, crevices, mines, and occasionally hollow trees and buildings (and bridges). Night roosts are common in more open sites, such as porches and open buildings (and under bridges). Maternity colonies form in early April and may have a dozen to 100 individuals. Young are born from April to July, mostly from May to June (Zeiner 1990b).

Mastiff bats occur from central California southward to central Mexico. In California, they have been recorded from Butte County southward in the western lowlands, through the southern California coastal basins, and in the western portions of the southeastern desert region. Mastiff bats are resident at low elevations in the coastal basins of southern California. They appear to favor rugged, rocky areas where suitable crevices are available for day roosts. Characteristically, day roosts are located in large cracks in exfoliating slabs of granite or sandstone. Mastiff bats also frequently roost in buildings, provided these have sheltering spaces with conditions similar to those described above (California Department of Fish and Game 1986). Mastiff bats are not commonly known to use bridges for roosts (Erickson 2002). Mastiff bats catch and feed on insects in flight. Nursery roosts generally occur in tight rock crevices at least 35 inches deep and

2 inches wide, often in crevices in buildings. Suitable habitat consists of extensive open areas with abundant roost locations provided by crevices in rock outcrops and buildings. Copulation probably occurs most frequently in early spring (March), and in California, parturition may occur from early April through August or September. Adults of both sexes can be found together throughout the year (Zeiner 1990b).

#### 4.4.5.1 Survey Results

An initial habitat-based site assessment was conducted by Jones & Stokes biologist Erin Hitchcock at the Manning Avenue Bridge Replacement Project site on May 10, 2007, to determine the potential for bats to occur at the project site. Manning Avenue Bridge was found to contain features that could support both day- and night-roosting bats. No bat sign was observed during this site visit. Ms. Hitchcock conducted a second day visit to the site on June 20, 2007, and observed a moderate amount of bat guano and heard bat chirping coming from an expansion crack under the northeastern side of the bridge. A focused breeding-season bat survey was conducted on the night of July 25, 2007, from the period just before dark until complete darkness. The purpose of this survey was to observe bat emergence from the roost to visually estimate the roost size and conduct acoustic monitoring using an ultrasonic device that detects and records bat echolocation calls, which can later be analyzed for species determination. After observation of emergence activity and the expansion crack housing the bats (using binoculars and a light source), it was determined that the bat roost contained approximately 200 bats.

Echolocation calls recorded at the project site were analyzed for species determination according to call structure and frequency. Call analysis revealed that 87% of the echolocation calls recorded were in the 50-kilohertz (kHz) range and exhibited a structure generally consistent with that of Yuma myotis and California myotis (*Myotis californicus*) bats. While specific recordings tended to resemble one species more closely than the other, the calls of these two species are very similar. Therefore, it may not be possible to distinguish these species from one another based on calls alone. Nine percent of calls recorded were produced by bats that echolocate in the 25–30 kHz range. The structure of these calls indicates that they could have been produced by any of the following species: big brown bat, fringed myotis (*Myotis thysanoides*), or pallid bat. These calls were not distinct enough for positive species determination. The remaining 4% of the echolocation calls recorded were distinctly typical of those produced by Mexican free-tailed bats. Therefore, given the acoustic monitoring results, the maternal roost at the project site is most likely composed of Yuma myotis or California myotis species, but it may be composed of both. Also, a small number of Mexican free-tailed bats may be using the bridge for a maternal roost. A small number of big brown bats, fringed myotis, or pallid bats could, potentially, be using the bridge as a maternal roost or using the area for foraging.

#### 4.4.5.2 Avoidance and Minimization Efforts

*Install Bat Exclusion Devices in Late August*

As currently proposed, bridge construction would occur during the bat breeding season. A breeding-season survey was conducted in July 2007, which identified maternal roosting bats at the bridge. Nonbreeding-season surveys were not conducted; therefore, it is not known if the bridge is being used as winter hibernation habitat. Hibernation roosts are not well known in bridge structures, possibly due to airflow dynamics and the limited thermal mass of bridges as compared to caves or mines (Erickson 2002). Though there is limited information on the suitability of bridges as hibernation habitat, there is the potential for hibernating bats to use the

bridge for winter hibernation. Thus, in order to avoid direct impacts on both maternal roosting bats and potential hibernating bats, bat exclusion will be implemented in late August as recommended in *California Bat Mitigation—Techniques, Solutions, and Effectiveness* (H. T. Harvey and Associates 2004).

Exclusion involves installing one-way devices that allow bats to exit the roost but not to return. To implement an exclusion, all primary exit points are first identified and marked. All other emergence points larger than 0.25 inch are sealed with suitable material such as steel wool, wood, backer rod, expanding foam, or caulk. Access to unused portions of long crevices can also be minimized by sealing them with these materials. One-way valves are then placed over the primary exit points to prevent re-entry. Simple one-way valves can be constructed using wire mesh cones, polyvinyl chloride (PVC), and strips of clear plastic sheeting attached over exit points.

Once the bats have been excluded, roosts spaces can be permanently filled with a suitable substance. Care should be taken to avoid sealing bats into a roost, particularly during the maternity season when non-flying young are present. To ensure that bats do not become trapped in the roost, a bat survey should be conducted from just before dark until complete darkness prior to sealing the roosting habitat.

#### *4.4.5.3 Project Impacts—Proposed Project*

The proposed project would involve the replacement of both the northern and southern halves of the bridge with a new bridge. The project would therefore require the removal of occupied maternal roosting habitat. The bridge may also be used as night- and/or day-roosting habitat during the fall and winter seasons by the same or different species. Exclusion devices will be implemented in the nonbreeding season to prevent maternal roosting bats from beginning a maternal roost prior to construction. This will ensure that there will be no direct impacts on an active roost as a result of construction. The optimum time period for placement of the exclusion devices is late August, which is outside of the breeding and winter hibernation seasons. The replacement of the bridge will require the removal of the existing bat roosting habitat, which will affect roosting bats through habitat modification. This impact is expected to be temporary because the new bridge will include a bat-friendly bridge design, described under Compensation Mitigation below.

Long-term impacts on the bat colony would occur if permanent alterations to the existing bridge prevent either nursery or hibernation bat roosting. Permanent loss of the bridge as a suitable bat roosting site would be a substantial impact.

#### *4.4.5.4 Project Impacts—Project Alternative*

The project alternative would involve removal and replacement of the northern half of the bridge. The bat roost is located under the northeast portion of the bridge and would therefore be removed as part of this alternative just as it would under the proposed project. Implementation of the same types of avoidance and minimization measures, as well as compensatory mitigation, required for the proposed project would be required for the Project Alternative. Therefore, comparing the Project Alternative to the proposed project, there is no difference in the impacts on roosting bats.

#### 4.4.5.5 Compensation Mitigation

*Mitigation Measure BIO-4: Include Bat-Friendly Designs in the Final Bridge Design*

Implementation of the following bat-friendly designs would avoid long-term impacts on nursery or hibernation bat roosts by providing suitable replacement habitat to accommodate the existing bat colony. Off-structure mitigation for bats on bridges has been marginally or not at all effective and is not considered adequate mitigation for the loss of roosting habitat at Manning Avenue Bridge (H. T. Harvey and Associates 2004).

The following basic design recommendations (H. T. Harvey and Associates 2004) should serve as general guidance only. Final design of these structures will depend on the final bridge design.

*Bridge Design—Two Separate Box Girder Roadways*

**Two-inch-thick, cast, lightweight concrete panels mounted on spacers on the two facing exterior box girder surfaces.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. They should extend down at least 36 inches (up to 72 inches, if possible). The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

This mitigation will provide primarily day-roost habitat but will not replace night-roost habitat lost with the box girder replacement design.

*Bridge Design—Two Separate Bulb T-Girder Roadways*

**Two-inch-thick, cast, lightweight concrete panels mounted on vertical surfaces of selected bulb T-girders.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. Panel height should be at least 24 inches, although 36 inches or more is preferable. The bottom, open portion of the panel will be mounted at least 12 inches above the girder bulb to permit unrestricted ingress/egress. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

This design will provide primarily day-roost habitat. To replace lost night-roost habitat, lateral interstices between bulb T-girders should be designed, such as where the girders rest on pier platforms, to create pockets similar to those found in the existing bridge that trap warm air.

*Bridge Design—Single-Width Box Girder Design of Two Sections with Closure Pour*

**Two-inch-thick, cast, lightweight concrete panels mounted on spacers for one or both of the vertical surfaces of the closure pour.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. They should extend down at least 36 inches (up to 72 inches, if possible). The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

**Hanging, cast, lightweight, concrete single-crevice sections mounted on the ventral surface of the closure pour**. These should be installed centrally along the axis of the closure pour. They should extend down at least 36 inches (or farther, if possible). The total roost area should replicate that available in the existing bridge.

These designs will provide primarily day-roost habitat. They will probably replace only a small percentage of the existing night-roost habitat lost with the box girder replacement design. To replace lost night-roost habitat, lateral interstices should be designed into the closure pour to create pockets similar to those found in the existing bridge that trap warm air.

*Bridge Design—Single-Width Bulb T-Girder Roadways with Closure Pour*

**Two-inch-thick, cast, lightweight concrete panels mounted on vertical surfaces of selected Bulb T-Girders.** These should be installed longitudinally. The top edge of the panels should be capped, with the panels mounted as close to the deck/girder joint as reasonable. Panel height should be at least 24 inches, although 36 inches is preferable. The bottom, open portion of the panel will be mounted at least 12 inches above the girder bulb to permit unrestricted ingress/egress. The gap created by mounting on spacers should be equal to the size of the gap in the existing expansion joints. It can be varied by mounting on tapered spacers. The total roost area should replicate that available in the existing bridge.

**Hanging, cast, lightweight, concrete single-crevice sections mounted on the ventral surface of the closure pour.** These should be installed centrally along the axis of the closure pour. They should extend down at least 36 inches (or farther, if possible). The total roost area should replicate that available in the existing bridge.

These designs will provide primarily day-roost habitat. To replace lost night-roost habitat, lateral interstices between bulb T-girders should be designed, such as where girders rest on pier platforms, to create pockets similar to those found in the existing bridge that trap warm air.

Upon implementation of the chosen bat-friendly design, the structure(s) should be surveyed for night emergence just following construction during both the early and late breeding seasons (May to June and mid-July to mid-August). These surveys will provide information on the efficacy of the design and insights into adaptive management, which may be required to correct problems with the replacement habitat.

#### *4.4.5.6 Cumulative Effects*

Implementation of avoidance and minimization efforts proposed for bat roosts would ensure that no direct impacts to bats would result from construction. Compensation mitigation would further reduce impacts to bat roosts at the bridge by creating replacement habitat on site that would adequately support existing bat roosts. Therefore, the project would not permanently reduce or eliminate essential bat habitat at the Manning Avenue Bridge, and would not result in a decrease in bat diversity or numbers. No cumulative impact to bat populations in the region is expected.

## 4.5 Other Biological Issues

### 4.5.1 Invasive Species

Invasive species are plant species designated as federal noxious weeds by the USDA, species listed by the CDFA, and other invasive plants identified by the Cal-IPC. Roads, highways, and related construction projects are some of the principal dispersal pathways for invasive plant species. The introduction and spread of invasive plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species. The CDFA and Cal-IPC lists were used for the analysis of invasive species in the study area.

#### *4.5.1.1 Survey Results*

Table 3-2 identifies the invasive species from the CDFA and Cal-IPC lists that were found in the study area. The infestation of the study area by these species occurs primarily in the annual grassland, although Himalayan blackberry is common within riparian forest.

#### *4.5.1.2 Avoidance and Minimization Efforts*

*Avoid the Introduction and Spread of Invasive Species*

Implementation of the following measure would avoid and minimize the introduction and spread of invasive plant species during construction.

The City's contractor will be responsible for avoiding the introduction of new invasive species and the spread of invasive species in the study area. Accordingly, the following measures will be implemented during construction.

- Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of invasive species.
- Minimize surface disturbance within the construction work area as much as possible.
- Seed all disturbed areas with certified weed-free native and nonnative mixes. Mulch with certified weed-free mulch. Rice straw may be used to mulch upland areas.
- Use native, noninvasive species or nonpersistent hybrids in erosion control plantings to stabilize site conditions and prevent invasive species from colonizing.

#### *4.5.1.3 Project Impacts*

Invasive weed species in the study area are present throughout the annual grassland/ruderal community and the agricultural areas. The project would temporarily create a disturbed area into which invasive species could spread, but it would not substantially increase the area supporting invasive species or subject it to ongoing repeated disturbance. The proposed project is not anticipated to increase or decrease the area currently occupied by invasive species or spread invasive species. Implementation of the avoidance and minimization efforts described above would avoid potential impacts associated with invasive plant species. No further mitigation is proposed.

#### 4.5.1.4 Cumulative Effects

Cumulative impacts due to the spread of invasive species would result from construction of other general development projects in Fresno County. Construction of the proposed project would add to the cumulative spread of invasive species. However, with implementation of the avoidance and minimization efforts, the proposed project would not substantially contribute to the cumulative spread of invasive species.

# Chapter 5 Results: Permits and Technical Studies for Special Laws or Conditions

## 5.1 Regulatory Requirements

Applicable federal and state permits and approvals that could be required prior to construction of the proposed project are listed in Table 5-1.

**Table 5-1. Permits and Approvals Potentially Required for the Proposed Project**

| Permit/Approval | Approving Agency | Permit/Approval Required? | | Comments |
|---|---|---|---|---|
| | | Yes | No | |
| Endangered Species Act Section 7: Consultation and Incidental Take Permit | U.S. Fish and Wildlife Service and National Marine Fisheries Service | X | | Potential impacts on VELB are anticipated. |
| Clean Water Act Section 401: Water Quality Certification | Regional Water Quality Control Board | X | | Fill within the Kings River is anticipated. |
| Clean Water Act Section 404: Placement of Fill | U.S. Army Corps of Engineers | X | | Fill within the Kings River is anticipated. |
| Land Use Agreement (lease) | State Lands Commission | X | | Caltrans may have an existing lease on the Manning Avenue Bridge. Additional coordination with the State Lands Commission would be necessary to determine if this lease is still valid. |
| California Fish and Game Code Section 1602 | California Department of Fish and Game | X | | Apply for Streambed Alteration Agreement. |
| Executive Order 13112: Prevention and Control of Invasive Species | Federal Highway Administration | X | | Mitigation identified in Chapter 4 satisfies requirement. |
| Executive Order 13186: Migratory Bird Treaty Act | Federal Highway Administration | X | | Mitigation identified in Chapter 4 satisfies requirement. |

## 5.2 Federal Endangered Species Act Consultation Summary

The proposed project would require the removal of elderberry shrubs and could result in the take of VELB. A biological assessment for VELB is being prepared for the proposed project and upon completion will be submitted to USFWS.

## 5.3 California Endangered Species Act Consultation Summary

The proposed project would not result in take of a state-listed species. Therefore, no CESA coordination is required.

## 5.4 Wetlands and Other Waters Coordination Summary

A preliminary delineation of waters of the United States in the study area has been prepared for the proposed project (Appendix C). Submittal of the report to the Corps and subsequent verification is pending.

## 5.5 Federal Fisheries and Essential Fish Habitat

The proposed project would not result in take of a federally listed fish species or essential fish habitat. Therefore, no coordination with NMFS is required.

# Chapter 6 References Cited

## 6.1 Printed References


American Ornithologists' Union. 1983. Checklist of North American birds. 6th edition. Lawrence, KS: Allen Press.

Barr, C. B. 1991. *The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle:* Desmocerus californicus dimorphus. Sacramento, CA: U.S. Fish and Wildlife Service.

California Department of Fish and Game. 1986. Mammalian Species of Special Concern in California: California Mastiff Bat. Habitat Conservation Planning Branch. Available: <http://www.dfg.ca.gov/hcpb/cgi-bin/read_one.asp?specy=mammals&idNum=14>. Accessed: July 31, 2007.

California Department of Fish and Game. 1994. *Staff report regarding mitigation for impacts to Swainson's hawk (*Buteo swainsoni*) in the Central Valley of California.* November 1, 1994. Sacramento, CA.

California Department of Fish and Game. 2003. *The Vegetation Classification and Mapping Program; List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database.* September 2003 Edition. Wildlife and Habitat Data Analysis Branch. Sacramento, CA.

California Department of Food and Agriculture. 2004. Pest Ratings of Noxious Weed Species and Noxious Weed Seed. Available: <http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_list-pestrating.htm>. Last updated: March 9, 2004.

California Invasive Plant Council. 2006. California Invasive Plant Inventory, Appendix 1. Species Listed by Category. Available at: <http://www.cal-ipc.org/ip/inventory/pdf/Inventory2006.pdf>. Accessed: September 2007.

California Native Plant Society. 2007. On-line Inventory of Rare and Endangered Plants of California, v7-07c 7-09-07. Available at: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed: September 2007.

California Natural Diversity Database. 2007. Records search of the Reedley, Sanger, Traver, Wahtoke, Orange Cove North, Orange Cove South, Selma, Burris Park, and Monson USGS 7.5-minute quadrangles. Sacramento CA: California Department of Fish and Game. Available: <http://www.dfg.ca.gov/whdab/html/cnddb.html>. Accessed: April 20, 2007.

California Natural Diversity Database. 2007. RareFind 3, version 3.1.0 (May 2007 update). Records search of Manning Avenue Bridge study area located on the Reedley USGS quadrangle and a 10-mile radius surrounding the study area. Sacramento CA: California Department of Fish and Game.

City of Reedley. 2007. Manning Avenue Bridge Replacement Project Delineation of Waters of the United States, City of Reedley, California. Prepared by Jones & Stokes.

Erickson, Gregg A. 2002. *Transportation Structures: Bats and Bridges Technical Bulletin* (Hitchhiker's Guide to Bat Roosts). California Department of Transportation, Sacramento, CA.

H. T. Harvey and Associates (with Greg Tartarian and Elizabeth Pierson). 2004. *California Bat Mitigation—Techniques, Solutions, and Effectiveness*. Prepared for Caltrans, Office of Biological Studies and Technical Assistance, Sacramento, CA ,and Gene Trapp, California State University Foundation, Sacramento, CA.

Hickman, J. C. 1993. *The Jepson Manual: Higher Plants of California*. Berkeley, CA: University of California Press.

Huntington, G. 1971. *Soil Survey of the Eastern Fresno Area, California.* USDA and the University of California Agricultural Experiment Station. Davis, CA.

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Rancho Cordova, CA: California Department of Fish and Game, Inland Fisheries Division.

Jennings, M. R., M. P. Hayes, and D. C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog (*Rana aurora draytonii*) and the western pond turtle (*Emys marmorata*) on the list of endangered and threatened wildlife and plants.

Katibah, E. F., N. E. Nedeff, and K. J. Drammer. 1984. Summary of Riparian Vegetation Areal and Linear Extent Measurements from the Central Valley Riparian Mapping Project. In *California Riparian Systems,* R. E. Warner and K. M. Hendrix (eds.). Berkeley, CA: University of California Press.

Linsley, E. G. and J. A. Chemsak. 1972. *Cerambycidae of North America, Part No. 1. Taxonomy and Classification of the Subfamily Lepturinae.* University of California Publication of Entomology. Volume 69. Berkeley, CA: University of California Press.

Quincy Engineering, Inc. 2007. *Draft Feasibility Study. Kings River Bridge at Manning Avenue.* Bridge No. 42C-0010. January. Prepared for City of Reedley Department of Public Works, Reedley, CA.

Remsen, J. V. 1978. *Bird Species of Special Concern in California: An Annotated List of Declining or Vulnerable Bird Species.* (Wildlife Management Branch Administrative

Report No. 78-1.) California Department of Fish and Game, Nongame Wildlife Investigations. Sacramento, CA.

Roberts, W. G., J. G. Howe, and J. Major. 1977. A Survey of Riparian Forest Flora and Fauna in California. In A. Sands (ed.), *Riparian Forests in California: Their Ecology and Conservation*. Davis, CA: University of California at Davis Institute of Ecology.

Stebbins, R. C. 1985. *A Field Guide to Western Reptiles and Amphibians*. Boston, MA: Houghton Mifflin Co.

U.S. Army Corps of Engineers. 2006. Interim regional supplement to the corps of engineers wetland delineation manual for the arid west region. (ERDC/EL TR-06-16.) Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture. 2007. WETS Table Documentation for the Fresno WSO AP Cooperative Weather Station (Station 043257), California. Natural Resources Conservation Service. Available: <ftp://ftp.wcc.nrcs.usda.gov/support/climate/wetlands/ca/06019.txt>. Accessed: April 18, 2007. Last updated: August 29, 2002.

U.S. Fish and Wildlife Service. 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. July 9. Sacramento, CA.

U.S. Fish and Wildlife Service. 2007. List of Endangered and Threatened Species That May Occur in or Be Affected by Projects on the Reedley Quadrant and in Fresno County. Available: <http://sacramento.fws.gov/es/spp_list.htm>. Accessed: April 20, 2007.

Warner, R. E., and K. M. Hendrix (eds.). 1984. *California Riparian Systems: Ecology, Conservation, and Productive Management*. Berkeley, CA: University of California Press.

Western Regional Climate Center. 2007. Average Monthly Total Precipitation for the Fresno WSO AP Weather Station (Station 043257), California. Available: <http://www.wrcc.dri.edu/summary/Climsmcca.html>. Accessed: April 18, 2007.

Williams, D. F. 1986. *Mammalian Species of Concern in California*. State of California. The Resources Agency. Sacramento, CA: California Department of Fish and Game.

Zeiner, D. C., F. Laudenslayer, K. E. Mayer, and M. White. 1990a. *Birds.* Volume II of *California Wildlife.* Sacramento, CA: California Department of Fish and Game.

Zeiner, D. C., F. Laudenslayer, K. E. Mayer, and M. White. 1990b. *Mammals*. Volume III of California Wildlife. Sacramento, CA: California Department of Fish and Game.

# Appendix A California Natural Diversity Database Records Search

Print table Export entire table to a text file Close window

Results for quads centered on REEDLEY Quad (3611954) - 56 elements selected

| Record | QUADNAME | ELMCODE | SCINAME | COMNAME | FEDSTATUS | CALSTATUS | CDFG | CNPSLIST |
|---|---|---|---|---|---|---|---|---|
| 1 | Burris Park | AAAAA01180 | Ambystoma californiense | California tiger salamander | Threatened | None | SC | |
| 2 | Burris Park | AAABF01030 | Spea (=Scaphiopus) hammondii | western spadefoot | None | None | SC | |
| 3 | Burris Park | ABNSB10010 | Athene cunicularia | burrowing owl | None | None | SC | |
| 4 | Burris Park | AMAJA03041 | Vulpes macrotis mutica | San Joaquin kit fox | Endangered | Threatened | | |
| 5 | Burris Park | CTT42120CA | Valley Sacaton Grassland | Valley Sacaton Grassland | None | None | | |
| 6 | Burris Park | ICBRA03030 | Branchinecta lynchi | vernal pool fairy shrimp | Threatened | None | | |
| 7 | Burris Park | ICBRA10010 | Lepidurus packardi | vernal pool tadpole shrimp | Endangered | None | | |
| 8 | Monson | AAAAA01180 | Ambystoma californiense | California tiger salamander | Threatened | None | SC | |
| 9 | Monson | AAABF01030 | Spea (=Scaphiopus) hammondii | western spadefoot | None | None | SC | |
| 10 | Monson | ABNSB10010 | Athene cunicularia | burrowing owl | None | None | SC | |
| 11 | Monson | AMAJA03041 | Vulpes macrotis mutica | San Joaquin kit fox | Endangered | Threatened | | |
| 12 | Monson | CTT44110CA | Northern Hardpan Vernal Pool | Northern Hardpan Vernal Pool | None | None | | |
| 13 | Monson | ICBRA03030 | Branchinecta lynchi | vernal pool fairy shrimp | Threatened | None | | |
| 14 | Monson | ICBRA10010 | Lepidurus packardi | vernal pool tadpole shrimp | Endangered | None | | |
| 15 | Monson | PDEUP0D150 | Chamaesyce hooveri | Hoover's spurge | Threatened | None | | 1B.2 |
| 16 | Monson | PDRAN0B1J0 | Delphinium recurvatum | recurved larkspur | None | None | | 1B.2 |
| 17 | Monson | PMPOA4G060 | Orcuttia inaequalis | San Joaquin Valley orcutt grass | Threatened | Endangered | | 1B.1 |
| 18 | Orange Cove North | AAAAA01180 | Ambystoma californiense | California tiger salamander | Threatened | None | SC | |
| 19 | Orange Cove North | AAABF01030 | Spea (=Scaphiopus) hammondii | western spadefoot | None | None | SC | |
| 20 | Orange Cove North | ARAAD02030 | Emys (=Clemmys) marmorata | western pond turtle | None | None | SC | |
| 21 | Orange Cove North | IICOL4C030 | Lytta molesta | molestan blister beetle | None | None | | |
| 22 | Orange Cove North | ILARA98020 | Talanites moodyae | Moody's gnaphosid spider | None | None | | |
| 23 | Orange Cove North | PDAPI0Z0Y0 | Eryngium spinosepalum | spiny-sepaled button-celery | None | None | | 1B.2 |
| 24 | Orange Cove North | PMPOA4G060 | Orcuttia inaequalis | San Joaquin Valley orcutt grass | Threatened | Endangered | | 1B.1 |
| 25 | Orange Cove South | AAAAA01180 | Ambystoma californiense | California tiger salamander | Threatened | None | SC | |
| 26 | Orange Cove South | AAABF01030 | Spea (=Scaphiopus) hammondii | western spadefoot | None | None | SC | |
| 27 | Orange Cove South | ABNSB10010 | Athene cunicularia | burrowing owl | None | None | SC | |
| 28 | Orange Cove South | AMAJA03041 | Vulpes macrotis mutica | San Joaquin kit fox | Endangered | Threatened | | |
| 29 | Orange Cove South | IICOL4C030 | Lytta molesta | molestan blister beetle | None | None | | |
| 30 | Orange Cove South | ILARA98020 | Talanites moodyae | Moody's gnaphosid spider | None | None | | |
| 31 | Orange Cove South | PDAPI0Z0Y0 | Eryngium spinosepalum | spiny-sepaled button-celery | None | None | | 1B.2 |
| 32 | Orange Cove South | PDAST7P030 | Pseudobahia peirsonii | San Joaquin adobe sunburst | Threatened | Endangered | | 1B.1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 33 | Reedley | AMACC10010 | Antrozous pallidus | pallid bat | None | None | SC | |
| 34 | Reedley | AMAJA03041 | Vulpes macrotis mutica | San Joaquin kit fox | Endangered | Threatened | | |
| 35 | Reedley | IICOL48011 | Desmocerus californicus dimorphus | valley elderberry longhorn beetle | Threatened | None | | |
| 36 | Reedley | PDAST7P030 | Pseudobahia peirsonii | San Joaquin adobe sunburst | Threatened | Endangered | | 1B.1 |
| 37 | Sanger | ABNRB02022 | Coccyzus americanus occidentalis | western yellow-billed cuckoo | Candidate | Endangered | | |
| 38 | Sanger | IICOL48011 | Desmocerus californicus dimorphus | valley elderberry longhorn beetle | Threatened | None | | |
| 39 | Sanger | PMPOA6N010 | Tuctoria greenei | Greene's tuctoria | Endangered | Rare | | 1B.1 |
| 40 | Traver | AAAAA01180 | Ambystoma californiense | California tiger salamander | Threatened | None | SC | |
| 41 | Traver | ABNSB10010 | Athene cunicularia | burrowing owl | None | None | SC | |
| 42 | Traver | AMACD02011 | Eumops perotis californicus | western mastiff bat | None | None | SC | |
| 43 | Traver | AMAJA03041 | Vulpes macrotis mutica | San Joaquin kit fox | Endangered | Threatened | | |
| 44 | Traver | CTT42120CA | Valley Sacaton Grassland | Valley Sacaton Grassland | None | None | | |
| 45 | Traver | CTT44120CA | Northern Claypan Vernal Pool | Northern Claypan Vernal Pool | None | None | | |
| 46 | Traver | ICBRA03030 | Branchinecta lynchi | vernal pool fairy shrimp | Threatened | None | | |
| 47 | Traver | ICBRA10010 | Lepidurus packardi | vernal pool tadpole shrimp | Endangered | None | | |
| 48 | Traver | PDCHE042M0 | Atriplex minuscula | lesser saltscale | None | None | | 1B.1 |
| 49 | Traver | PDCHE042V0 | Atriplex erecticaulis | Earlimart orache | None | None | | 1B.2 |
| 50 | Wahtoke | AAAAA01180 | Ambystoma californiense | California tiger salamander | Threatened | None | SC | |
| 51 | Wahtoke | ARAAD02030 | Emys (=Clemmys) marmorata | western pond turtle | None | None | SC | |
| 52 | Wahtoke | CTT61420CA | Great Valley Mixed Riparian Forest | Great Valley Mixed Riparian Forest | None | None | | |
| 53 | Wahtoke | ICBRA03030 | Branchinecta lynchi | vernal pool fairy shrimp | Threatened | None | | |
| 54 | Wahtoke | IICOL48011 | Desmocerus californicus dimorphus | valley elderberry longhorn beetle | Threatened | None | | |
| 55 | Wahtoke | PDAST7P030 | Pseudobahia peirsonii | San Joaquin adobe sunburst | Threatened | Endangered | | 1B.1 |
| 56 | Wahtoke | PMPOA4G060 | Orcuttia inaequalis | San Joaquin Valley orcutt grass | Threatened | Endangered | | 1B.1 |

**Print table** **Export entire table to a text file** **Close window**

# Appendix B U.S. Fish and Wildlife Service List of Endangered and Threatened Species that May Occur in the Project Area

# 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: 070420022804

Database Last Updated: March 5, 2007

## Quad Lists

Listed Species

Invertebrates

*Branchinecta lynchi*

*vernal pool fairy shrimp (T)*

*Desmocerus californicus dimorphus*

*valley elderberry longhorn beetle (T)*

Fish

*Hypomesus transpacificus*

*delta smelt (T)*

Amphibians

*Ambystoma californiense*

*California tiger salamander, central population (T)*

*Rana aurora draytonii*

*California red-legged frog (T)*

Reptiles

*Gambelia (=Crotaphytus) sila*

*blunt-nosed leopard lizard (E)*

*Thamnophis gigas*

*giant garter snake (T)*

Birds

*Haliaeetus leucocephalus*

*bald eagle (T)*

Mammals

*Dipodomys nitratoides exilis*

*Fresno kangaroo rat (E)*

*Dipodomys nitratoides nitratoides*

*Tipton kangaroo rat (E)*

Quads Containing Listed, Proposed or Candidate Species:

REEDLEY (356C)

## County Lists

### Fresno County

Listed Species

Invertebrates

*Branchinecta lynchi*

*Critical habitat, vernal pool fairy shrimp (X)*

*vernal pool fairy shrimp (T)*

*Desmocerus californicus dimorphus*
*valley elderberry longhorn beetle (T)*

*Lepidurus packardi*
*Critical habitat, vernal pool tadpole shrimp (X)*
*vernal pool tadpole shrimp (E)*

## Fish

*Oncorhynchus (=Salmo) clarki henshawi*
*Lahontan cutthroat trout (T)*

*Oncorhynchus (=Salmo) clarki seleniris*
*Paiute cutthroat trout (T)*

*Oncorhynchus mykiss*
*Central Valley steelhead (T) (NMFS)*

## Amphibians

*Ambystoma californiense*
*California tiger salamander, central population (T)*
*Critical habitat, CA tiger salamander, central population (X)*

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

## Reptiles

*Gambelia (=Crotaphytus) sila*
*blunt-nosed leopard lizard (E)*

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

## Birds

*Gymnogyps californianus*
*California condor (E)*

*Haliaeetus leucocephalus*
*bald eagle (T)*

## Mammals

*Dipodomys ingens*
*giant kangaroo rat (E)*

*Dipodomys nitratoides exilis*
*Critical habitat, Fresno kangaroo rat (X)*
*Fresno kangaroo rat (E)*

*Dipodomys nitratoides nitratoides*
*Tipton kangaroo rat (E)*

*Ovis canadensis californiana*
*Sierra Nevada (=California) bighorn sheep (E)*

*Vulpes macrotis mutica*
*San Joaquin kit fox (E)*

## Plants

*Calyptridium pulchellum*
*Mariposa pussy-paws (T)*

*Camissonia benitensis*
*San Benito evening-primrose (T)*

*Castilleja campestris ssp. succulenta*
*Critical habitat, succulent (=fleshy) owl's-clover (X)*
*succulent (=fleshy) owl's-clover (T)*

*Caulanthus californicus*
*California jewelflower (E)*

*Cordylanthus palmatus*
*palmate-bracted bird's-beak (E)*

*Monolopia congdonii (=Lembertia congdonii)*
*San Joaquin woolly-threads (E)*

*Orcuttia inaequalis*
*Critical habitat, San Joaquin Valley Orcutt grass (X)*
*San Joaquin Valley Orcutt grass (T)*

*Orcuttia pilosa*
*Critical habitat, hairy Orcutt grass (X)*

*Pseudobahia bahiifolia*
*Hartweg's golden sunburst (E)*

*Pseudobahia peirsonii*
*San Joaquin adobe sunburst (T)*

*Sidalcea keckii*
*Critical habitat, Keck's checker-mallow (X)*
*Keck's checker-mallow (=checkerbloom) (E)*

## Candidate Species

### Amphibians

*Bufo canorus*

*Yosemite toad (C)*

*Rana muscosa*

*mountain yellow-legged frog (C)*

### Mammals

*Martes pennanti*

*fisher (C)*

### Plants

*Botrychium lineare*

*slender Moonwort (= narrowleaf grapefern) (C)*

## Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

# Important Information About Your Species List

## How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The Unit States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by th list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in y quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat b air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

## Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Pl Society's online Inventory of Rare and Endangered Plants.

## Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habit requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by yo project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

## Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act a "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

## Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, ther that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize th impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, the you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected the project, we recommend that you work with this office and the California Department of Fish and Game to devel plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related los habitat. You should include the plan in any environmental documents you file.

## Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide neec

space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelt and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species l Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our critical habitat page for maps.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we ha enough scientific information to eventually propose them for listing as threatened or endangered. By considering these spec early in your planning process you may be able to avoid the problems that could develop if one of these candidates was list before the end of your project.

## Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies a 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) 414-6580.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate spec in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be July 19, 2007.

# Appendix C Manning Avenue Bridge Replacement Project Delineation of Waters of the United States

Bound Separately

# Appendix D List of Plant Species Observed in the Study Area

## Appendix D. Plant Species Observed in the Study Area*

| Scientific Name | Common Name |
|---|---|
| ***Achillea millefolium*** | yarrow |
| *Anthriscus caucalis* | bur-chervil |
| ***Artemisia douglasiana*** | mugwort |
| *Avena fatua* | wild oat |
| *Bromus diandrus* | ripgut brome |
| *Bromus hordeaceus* | soft chess brome |
| *Bromus madritensis* | foxtail chess |
| *Capsella bursa-pastoris* | shepard's purse |
| *Carex barbarae* | Santa Barbara sedge |
| ***Cephalanthus occidentalis*** var. ***californicus*** | button bush |
| *Cerastium glomeratum* | mouse-ear chickweed |
| *Chamomilla suaveolens* | pineapple weed |
| *Chenopodium album* | pigweed |
| ***Conyza canadensis*** | horseweed |
| *Cynodon dactylon* | Bermuda grass |
| ***Cyperus eragrostis*** | tall flatsedge |
| ***Datura wrightii*** | jimson weed |
| ***Epilobium ciliatum*** | willow herb |
| *Erodium cicutarium* | red-stemmed filaree |
| *Eucalyptus* sp. | eucalyptus |
| ***Fraxinus latifolia*** | Oregon ash |
| *Gallium* sp. | bedstraw |
| *Gnaphalium luteo-album* | cudweed |
| ***Grindelia camporum*** | gumplant |
| *Hirschfeldia incana* | hirschfeldia |
| *Hordeum murinum* ssp. *leporinum* | foxtail barley |
| ***Juglans californica*** | California black walnut |
| *Juncus balticus* | baltic rush |
| *Lactuca serriola* | prickly lettuce |
| *Lolium multiflorum* | Italian ryegrass |
| ***Lotus scoparius*** | California broom |
| ***Marah fabaceus*** | wild cucumber |
| *Medicago polymorpha* | burclover |
| *Mimulus guttatus* | common monkeyflower |
| *Morus alba* | white mulberry |
| ***Muhlenbergia rigens*** | deergrass |
| *Myriophyllum aquaticum* | parrot's feather |
| *Nicotiana glauca* | tree tobacco |
| *Phalaris aquatica* | Harding grass |

| | |
|---|---|
| ***Phalaris arundinacea*** | reed canary grass |
| *Plantago major* | common plantain |
| *Poa annua* | annual bluegrass |
| ***Populus fremontii*** | Fremont cottonwood |
| *Polygonum persicaria* | lady's thumb |
| *Polypogon monspeliensis* | rabbit's-foot grass |
| ***Potentilla* sp.** | cinquefoil |
| ***Quercus lobata*** | valley oak |
| *Raphanus sativus* | wild radish |
| ***Rorippa palustris*** | bog yellow-cress |
| *Rubus discolor* | Himalaya blackberry |
| *Rumex crispus* | curly dock |
| *Rumex pulcher* | fiddle dock |
| ***Salix exigua*** | narrow-leaved willow |
| ***Salix goodingii*** | black willow |
| ***Salix lasiolepis*** | arroyo willow |
| *Salsola tragus* | Russian thistle |
| ***Sambucus mexicana*** | blue elderberry |
| *Schinus molle* | Peruvian pepper tree |
| *Senecio vulgaris* | old man of spring |
| *Silybum marinum* | milk thistle |
| *Sonchus oleraceus* | common sow thistle |
| *Sorghum halapense* | Johnson grass |
| *Tribulus terrestris* | puncture vine |
| ***Urtica dioica* ssp. *holosericea*** | stinging nettle |
| *Verbascum blatteria* | moth mullein |
| *Veronica anagallis-aquatica* | water speedwell |
| *Vicia sativa* | common vetch |
| ***Vitis californica*** | California wild grape |

* Native species indicated by **bold** type.

# Appendix E List of Wildlife Species Observed in the Study Area

## Appendix E. Wildlife Species Observed in the Study Area

| Scientific Name | Common Name |
|---|---|
| ***Reptiles*** | |
| *Sceloporus occidentalis* | Western fence lizard |
| ***Birds*** | |
| *Aphelocoma californica* | Western scrub-jay |
| *Ardea alba* | Great egret |
| *Buteo jamaicensis* | Red-tailed hawk |
| *Carpodacus mexicanus* | House finch |
| *Charadrius vociferus* | Killdeer |
| *Colaptes auratus* | Northern flicker |
| *Corvus brachyrhynchos* | American crow |
| *Euphagus cyanocephalus* | Brewer's Blackbird |
| *Petrochelidon pyrrhonota* | Cliff swallow |
| *Sayornis nigricans* | Black phoebe |
| ***Mammals*** | |
| *Didelphis virginiana* | Virginia opossum[1] |
| *Mephitis mephitis* | Stripped skunk |
| *Procyon lotor* | Racoon[2] |
| *Tadarida brasiliensis* | Mexican free-tailed bats[3] |
| *Myotis yumanensis* | Yuma myotis[3] |
| *Myotis californicus* | California myotis[3] |

[1] dead animal observed
[2] animal sign only observed
[3] determined through analysis of echolocation calls

***REVISED***

***ALL CELL PHONES AND ELECTRONIC DEVICES MUST BE TURNED OFF IN THE COUNCIL CHAMBERS***

# A G E N D A
# REEDLEY CITY COUNCIL MEETING

## 7:00 P.M.

## TUESDAY, AUGUST 25, 2009

## Meeting Held in the City Hall Council Chambers, 845 "G" Street, Reedley, California

The Council Chambers are accessible to the physically disabled. Requests for additional accommodations for the disabled, including auxiliary aids or services, should be made one week prior to the meeting by contacting the City Clerk at 637-4200 ext. 300.

Any document that is a public record and provided to a majority of the City Council regarding an open session item on the agenda will be made available for public inspection at City Hall, in the City Clerk's office, during normal business hours. In addition, such documents may be posted on the City's website.

**City of Reedley's Internet Address is www.reedley.com**

Mary L. Fast, Mayor

Pete Chavez, Mayor Pro Tem — Steven Rapada, Council Member

Ray Soleno, Council Member — Anita Betancourt, Council Member

**INVOCATION** – Pastor George Shibata of the Reedley Buddhist Church.

**PLEDGE OF ALLEGIANCE**

**ROLL CALL**

**PRESENTATION**

1. CHARLES BANKS-ALTEKRUSE OF THE NORTH FORK RANCHERIA PROJECT

**PUBLIC COMMENT** – *Provides an opportunity for members of the public to address the City Council on items of interest to the public within the Council's jurisdiction and which are not already on the agenda this evening. It is the policy of the Council not to answer questions impromptu. Concerns or complaints will be referred to the City Manager's office. Speakers should limit their comments to not more than three (3) minutes. No more than ten (10) minutes per issue will be allowed. For items which are on the agenda this evening, members of the public will be provided an opportunity to address the Council as each item is brought up for discussion.*

## NOTICE TO PUBLIC

***CONSENT*** *AGENDA items are considered routine in nature and voted upon as one item. Under a* ***CONSENT AGENDA*** *category, a recommended course of action for Each item is made. Any Council Member may remove any item from the* ***CONSENT AGENDA*** *in order to discuss and/or change the recommended Course of action, and the Council can approve the remainder of the* ***CONSENT AGENDA.*** *A Council Member's vote in favor of the* ***CONSENT AGENDA*** *is considered and recorded as a separate affirmative vote in favor of each action listed. Motions in favor of the* ***CONSENT AGENDA*** *are deemed to include a motion to waive the full reading of any ordinance on the* ***CONSENT AGENDA****. For adoption of ordinances, only those that have received a unanimous vote upon introduction are considered* ***CONSENT*** *items.*

**CONSENT AGENDA (Items 2-8)**

2. MINUTES OF THE AUGUST 11, 2009, SPECIAL REEDLEY CITY COUNCIL MEETING HELD IN JOINT SESSION WITH THE KCUSD BOARD – Recommend Council receive and file.

3. WARRANT REGISTER DATED AUGUST 25, 2009 – Recommend Council receive and file.

4. RESOLUTION NO. 2009-058 – A RESOLUTION AMENDING THE CURRENT M.O.U. FOR THE GSU AKA GENERAL SERVICES UNION LOCAL 39 – Recommend Council approve.

5. RESOLUTION NO. 2009-059 – A RESOLUTION ADVOCATING HEALTHY EATING AND ACTIVE LIVING – Recommend Council approve.

6. RESOLUTION NO. 2009-060 – A RESOLUTION ADOPTING THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION OF ENVIRONMENTAL IMPACTS FOR THE REPLACEMENT OF THE MANNING AVENUE BRIDGE OVER THE KINGS RIVER IN THE CITY OF REEDLEY – Recommend Council approve.

7. UPDATE TO THE CITY COUNCIL ON THE CONDITION OF PUBLIC STREETS IN THE CITY OF REEDLEY– Recommend Council receive and file.

8. BUDGET AMENDMENT – LAW ENFORCEMENT VEHICLES – DIF FUNDS – Recommend Council approve.

9. PURCHASE OF TWO 2008 FORD ESCAPES – ONE AS A VICTIM'S SERVICE VEHICLE AND THE SECOND AS AN ADMINISTRATIVE VEHICLE USING ALLOCATED DIF FUNDS – Recommend Council approve.

9A. RESOLUTION NO. 2009-062 – A RESOLUTION AWARDING A CONSTRUCTION CONTRACT TO VICTORY ENGINEERS, INC., FOR PHASE 1 OF CDBG PROJECT NO. 08571 – Recommend Council approve.

**UNFINISHED BUSINESS**

10. CONSIDERATION TO PAY OFF FORMER CHAMBER OF COMMERCE DEBT - Report, Discussion, and/or Council action to approve, modify, and/or take other action as appropriate (Administration)

**NEW BUSINESS**

*With respect to the approval of ordinances and resolutions, the reading of the title thereto shall be deemed a motion to waive a reading of the complete ordinance or resolution and unless there is a request by a Council Member that the ordinance or resolution be read in full, further reading of the ordinance or resolution shall be deemed waived by unanimous consent of the Council.*

11. ORDINANCE NO. 2009-04 – AN ORDINANCE AMENDING CHAPTER 3 OF TITLE 5 OF THE REEDLEY MUNICIPAL CODE RELATING TO ANIMAL CONTROL – first reading – Report, Discussion, and/or Council action to approve, modify, and/or take other action as appropriate (Police/Fire)

12. ORDINANCE NO. 2009-05 – AN ORDINANCE AMENDMENT OF THE CITY COUNCIL APPROVING ZONING ORDINANCE AMENDMENT APPLICATION NO. 2009-1 AMENDING SECTIONS 10-6B-3, 10-6C-3, 10-6B-2A, 10-6B-5C, AND 10-6C-2A OF THE REEDLEY MUNICIPAL CODE AND ADDING SECTION 6D TO CHAPTER 6 OF TITLE 10 OF THE REEDLEY MUNICIPAL CODE RELATING TO SECOND UNITS – first reading – Report, Discussion, and/or Council action to approve, modify, and/or take other action as appropriate (Planning)

13. RESOLUTION NO. 2009-061 – A RESOLUTION AUTHORIZING STAFF TO ENTER INTO A SERVICE AGREEMENT WITH HDR ENGINEERING TO PERFORM A COMPREHENSIVE SEWER RATE STUDY - Report, Discussion, and/or Council action to approve, modify, and/or take other action as appropriate (Public Works)

**COUNCIL REPORTS**

14. REQUESTS BY COUNCIL MEMBERS FOR FUTURE AGENDA ITEMS AND/OR REPORTS OF COUNCIL MEMBER ACTIVITIES

**STAFF REPORTS**

15. UPDATES AND/OR REPORTS BY CITY MANAGER AND/OR STAFF MEMBERS

16. COMMISSION REPORTS BY STAFF

**CLOSED SESSION**

16. CONFERENCE WITH REAL PROPERTY NEGOTIATOR

| | |
|---|---|
| Property: | 960 N. Columbia Avenue, Reedley – APN 363-174-027 |
| Negotiating Parties: | Jeff Manguen, (Limitless Living, LLC); Rocky Rogers (City) |
| Under Negotiation: | Price and Terms |

**ADJOURNMENT**

# REPORT TO CITY COUNCIL
# MEMORANDUM

***AGENDA ITEM NO:*** 6

***COUNCIL MEETING DATE:*** ***August 25, 2009***

***SUBJECT:***

Adopt IS/MND for the Manning Avenue Bridge Replacement Project

**RECOMMENDATION:**

Approve Resolution No. 2009-060 adopting the Initial Study/Mitigated Negative Declaration for the replacement of the Manning Avenue Bridge over the Kings River.

**BACKGROUND:**

In April 2006, Council awarded a consulting contract to Quincy Engineering and their team of environmental, geotechnical and bridge design experts. The firm of Jones and Stokes was given charge to conduct an initial study and prepare the appropriate environmental document per CEQA and NEPA guidelines. This project proposes to remove both of the existing bridges and replace them with a modern bridge per the latest design guidelines. The new bridge will be built and the old bridges will be removed in two stages thus keeping one bridge in service at all times.

On May 28, 2009, the City sent the IS/MND to various government and public agencies, posted it on the city web site and advertised the Notice to Adopt in the Reedley Exponent for a 30-day public comment and review period. Comments were received and have been responded to in writing and are included in the final environmental document.

**FISCAL IMPACT:**

Budgeted item: Yes
Expenditure: Ongoing
Fund Acct(s): 007-4450.5880, 041-3146.5880

Prepared by: _____ Capital Projects Manager

Approved by: _____ City Manager
Review by: _____ City Planner

Attachment(s):
1. Resolution 2009-060
2. Final IS/MND for the Manning Avenue Bridge Replacement Project

Motion:_____ Second:_____

**RESOLUTION NO. 2009-060**

**A RESOLUTION OF THE CITY OF REEDLEY CITY COUNCIL ADOPTING THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION OF ENVIRONMENTAL IMPACTS FOR THE REPLACEMENT OF THE MANNING AVENUE BRIDGE OVER THE KINGS RIVER IN THE CITY OF REEDLEY**

WHEREAS, an initial study and Mitigated Negative Declaration were prepared and distributed to applicable agencies for review and comment; and

WHEREAS, comments from applicable agencies were reviewed and considered in accordance with provisions of CEQA; and

WHEREAS, mitigation measures from the Mitigated Negative Declaration have been incorporated into project design and construction specifications that addresses environmental comments and concerns from the applicable agencies; and

WHEREAS, with incorporation of the mitigation measures from the Mitigated Negative Declaration into the project design and construction specifications, all environmental impacts can be mitigated to a level of less than significant; and

WHEREAS, the City of Reedley City Council finds that the Initial Study and Mitigated Negative Declaration contains and reflects the independent judgment of the City of Reedley

NOW, THEREFORE, BE IT RESOLVED that the City of Reedley City Council adopts the Initial Study and Mitigated Negative Declaration of environmental impacts for the Manning Avenue Bridge Replacement Project.

This foregoing resolution is hereby approved this 25th day of August, 2009, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

_____
Mary L. Fast
Mayor of the City of Reedley

ATTEST:

_____
Kay L. Pierce, City Clerk

# REPORT TO CITY COUNCIL
# — MEMORANDUM —

***AGENDA ITEM NO:*** 6

***COUNCIL MEETING DATE:*** ***August 25, 2009***

***SUBJECT:***

Adopt IS/MND for the Manning Avenue Bridge Replacement Project

**RECOMMENDATION:**

Approve Resolution No. 2009-060 adopting the Initial Study/Mitigated Negative Declaration for the replacement of the Manning Avenue Bridge over the Kings River.

**BACKGROUND:**

In April 2006, Council awarded a consulting contract to Quincy Engineering and their team of environmental, geotechnical and bridge design experts. The firm of Jones and Stokes was given charge to conduct an initial study and prepare the appropriate environmental document per CEQA and NEPA guidelines. This project proposes to remove both of the existing bridges and replace them with a modern bridge per the latest design guidelines. The new bridge will be built and the old bridges will be removed in two stages thus keeping one bridge in service at all times.

On May 28, 2009, the City sent the IS/MND to various government and public agencies, posted it on the city web site and advertised the Notice to Adopt in the Reedley Exponent for a 30-day public comment and review period. Comments were received and have been responded to in writing and are included in the final environmental document.

**FISCAL IMPACT:**

Budgeted item: Yes
Expenditure: Ongoing
Fund Acct(s): 007-4450.5880, 041-3146.5880

Prepared by: _____ Capital Projects Manager

Approved by: _____ City Manager
Review by: _____ City Planner

Attachment(s):
1. Resolution 2009-060
2. Final IS/MND for the Manning Avenue Bridge Replacement Project

Motion:_____ Second:_____

**RESOLUTION NO. 2009-060**

**A RESOLUTION OF THE CITY OF REEDLEY CITY COUNCIL ADOPTING THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION OF ENVIRONMENTAL IMPACTS FOR THE REPLACEMENT OF THE MANNING AVENUE BRIDGE OVER THE KINGS RIVER IN THE CITY OF REEDLEY**

WHEREAS, an initial study and Mitigated Negative Declaration were prepared and distributed to applicable agencies for review and comment; and

WHEREAS, comments from applicable agencies were reviewed and considered in accordance with provisions of CEQA; and

WHEREAS, mitigation measures from the Mitigated Negative Declaration have been incorporated into project design and construction specifications that addresses environmental comments and concerns from the applicable agencies; and

WHEREAS, with incorporation of the mitigation measures from the Mitigated Negative Declaration into the project design and construction specifications, all environmental impacts can be mitigated to a level of less than significant; and

WHEREAS, the City of Reedley City Council finds that the Initial Study and Mitigated Negative Declaration contains and reflects the independent judgment of the City of Reedley

NOW, THEREFORE, BE IT RESOLVED that the City of Reedley City Council adopts the Initial Study and Mitigated Negative Declaration of environmental impacts for the Manning Avenue Bridge Replacement Project.

This foregoing resolution is hereby approved this 25th day of August, 2009, by the following vote:

AYES:

NOES:

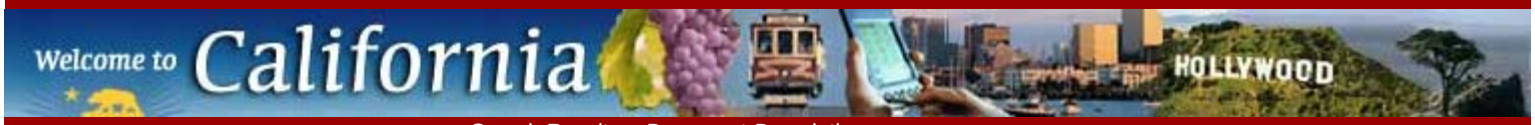
ABSTAIN:

ABSENT:

_____
Mary L. Fast
Mayor of the City of Reedley

ATTEST:

_____
Kay L. Pierce, City Clerk






# Manning Avenue Bridge Replacement

**SCH Number:** 2009051117

**Document Type:** NOD - Notice of Determination

**Project Lead Agency:** Reedley, City of

---

**Project Description**

The project will replace the structurally deficient Manning Avenue Bridge over the Kings River and includes the installation of new curb, gutter, and sidewalk approximately 1,250 feet along the north side of Manning Avenue from the east end of the Kings River Bridge to the project limits.

---

**Contact Information**

**Primary Contact:**
David Brletic
City of Reedley Public Works Department, City Hall
559 637 4200 x222
1733 9th Street
Reedley, CA 93654

---

**Project Location**

County: Fresno
City: Reedley
Region:
Cross Streets: Kings River Rd to the west, I Street/Manning Ave intersection to the east
Latitude/Longitude:
Parcel No: various
Township: 15S
Range: 23E
Section: 21,27
Base: MDB&M
Other Location Info:

---

**Determinations**

This is to advise that the ☒ Lead Agency ☐ Responsible Agency City of Reedley has approved the project described above on 8/25/2009 and has made the following determinations regarding the project described above.

1. The project ☐ will ☒ will not have a significant effect on the environment.

2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.

   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

3. Mitigation measures ☒ were ☐ were not made a condition of the approval of the project.

4. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.

5. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

**Final EIR Available at:** City of Reedley Community Development Department 1733 Ninth Street Reedley, CA 93654

---

**Date Received:** 7/7/2011

CEQAnet HOME | NEW SEARCH

Environmental Evaluation No. 472

E200910000270
AUG 27 2009
FRESNO COUNTY CLERK
BY _____ DEPUTY

# NOTICE OF DETERMINATION

**TO:** ☐ Office of Planning and Research
P. O. Box 3044, Room 212
Sacramento, CA 95812-3044

☒ Victor E. Salazar, County Clerk
County of Fresno
2221 Kern Street
Fresno, CA 93721-2600

**FROM:** David Brletic, City Planner
City of Reedley
1733 Ninth Street
Reedley, CA 93654
Phone: (559) 637-4200, Ext. 222

**SUBJECT:** **Filing of Notice of Determination in Compliance with Section 21108 or 21152 of the Public Resources Code**

**Project Title:** Manning Avenue Bridge Replacement Project

**Project Location (include county):** Manning Avenue in the City of Reedley, Fresno County, approximately 11 miles east of State Route 99 and extending from Kings River Road on the west side of the Kings River to approximately 300 feet from the intersection of Manning Avenue and "I" Street.

**Project Description:** The project would replace the structurally deficient Manning Avenue Bridge over the Kings River to improve public safety. The proposed project would also install new curb, gutter, and meandering sidewalk approximately 1,250 feet along both sides of Manning Avenue from the east end of the Kings River Bridge to the "I" Street intersection curb return.

This is to advise that the **City of Reedley, Lead Agency,** has approved the above described project on August 25, 2009 and has made the following determination regarding the above described project:

1. The project [☐ will ☒ will not] have a significant effect on the environment.

2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

3. Mitigation measures [☐ were ☒ were not] made a condition of the approval of the project.

4. A mitigation reporting or monitoring plan [☐ was ☒ was not] adopted for this project.

5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.

6. Findings [☐ were ☒ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the Negative Declaration, or Mitigated Negative Declaration is available to the General Public at: City of Reedley, Community Development Department, 1733 Ninth Street, Reedley, CA 93654.

David Brletic, City Planner

August 26, 2009
Date

Date received for filing at OPR:

E200910000270

# County of Fresno

COUNTY CLERK / REGISTRAR OF VOTERS
**VICTOR E. SALAZAR**

## List of Notices that Need to be Removed

| File Number | Project Title / Project Applicant Name | Agency File Number | Notice Description | Posted Date |
|---|---|---|---|---|
| E200910000269 | BUCHANAN HIGH SCHOOL PERFORMING ARTS CENTER<br>CLOVIS UNIFIED SCHOOL DISTRICT | | NOTICE OF AVAILABILITY | 08/27/2009 |
| E200910000270 | MANNING AVENUE BRIDGE REPLACEMENT PROJECT<br>CITY OF REEDLEY | | ADMINISTRATION FEE | 08/27/2009 |
| E200910000270 | MANNING AVENUE BRIDGE REPLACEMENT PROJECT<br>CITY OF REEDLEY | | NOTICE OF DETERMINATION | 08/27/2009 |

REMOVED BY: Massiah

ON: OCT 06 2009

**TABLE OF CONTENTS**

TABLE OF CONTENTS ..... 1
SECTION 10-2 HIGHWAY PLANTING AND IRRIGATION SYSTEMS ..... 2
10-2.01 GENERAL ..... 2
10-2.02 (BLANK) ..... 2
10-2.03 (BLANK) ..... 2
10-2.04 HIGHWAY PLANTING ..... 2
HIGHWAY PLANTING MATERIALS ..... 2
ROADSIDE CLEARING ..... 2
PESTICIDES ..... 3
PREPARING PLANTING AREAS ..... 3
PLANTING ..... 3
LINER PLANTS (Plant Group M) ..... 3
FOLIAGE PROTECTOR ..... 4
PLANT ESTABLISHMENT WORK ..... 4
10-2.05 IRRIGATION SYSTEMS ..... 4
VALVE BOXES ..... 5
BALL VALVES ..... 5
GATE VALVES ..... 5
ELECTRIC AUTOMATIC IRRIGATION COMPONENTS ..... 5
IRRIGATION SYSTEMS FUNCTIONAL TEST ..... 6
PIPE ..... 7
WATER SERVICE ASSEMBLY ..... 7
BACKFLOW PREVENTER ASSEMBLIES ..... 7
BACKFLOW PREVENTER ASSEMBLY ENCLOSURE ..... 7
TESTING NEW BACKFLOW PREVENTERS ..... 8
SPRINKLERS ..... 8
SPRINKLER (DRIP EMITTER) ..... 8
FILTER ASSEMBLY UNIT ..... 8
FINAL IRRIGATION SYSTEM CHECK ..... 8
10-2.06 ESTABLISHMENT MAINTENANCE ..... 9
PLANT WATERING ..... 9
WEED CONTROL ..... 9
REPLACEMENT PLANTING ..... 9
10-2.07 LONG-TERM OPERATION AND MAINTENANCE ..... 9
RESPONSIBLE PARTY ..... 10
IMPLEMENTATION SCHEDULE ..... 10
TREE PRESERVATION ..... 10
ELDERBERRY PRESERVATION ..... 10
VOLUNTEER GROWTH ..... 10
SELECTIVE CLEARING AND PRUNING ..... 10
WEED CONTROL ..... 10
FUNDING ..... 10
PUBLIC USE ..... 11

## SECTION 10-2 HIGHWAY PLANTING AND IRRIGATION SYSTEMS

### 10-2.01 GENERAL

The work performed in connection with highway planting and irrigation systems shall conform to the provisions in Section 20, "Erosion Control and Highway Planting," of the State Standard Specifications and these special provisions.

### 10-2.02 (BLANK)

### 10-2.03 (BLANK)

### 10-2.04 HIGHWAY PLANTING

The work performed in connection with highway planting shall conform to the provisions in Section 20-4, "Highway Planting," of the State Standard Specifications and these special provisions.

#### HIGHWAY PLANTING MATERIALS

##### Mulch

Mulch must be wood chips.

Provide certification from the manufacturer that the mulch is free of the sudden oak death pathogen *Phytophera ramorum*.

#### ROADSIDE CLEARING

Before preparing planting areas and wild flower seeding areas, or commencing irrigation trenching operations for planting areas, trash and debris shall be removed from these areas as required under Construction Site Management of these special provisions.

The project area shall be cleared as specified herein:

I. Weeds shall be killed and removed within an area 6 feet in diameter centered at each plant location where the plants are to be planted more than 8 feet apart and are located outside of ground cover areas.

J. Weeds shall be killed and removed within an area 2 feet in diameter centered at each liner or seedling plant location where the plants are planted more than 10 feet apart. At locations where liner or seedling plants are to be planted less than 10 feet apart, weeds shall be killed and removed within the entire area.

After the initial roadside clearing is complete, additional roadside clearing work shall be performed as necessary to maintain the areas, as specified above, in a neat appearance until the start of the plant establishment period. This work shall include the following:

A. Trash and debris shall be removed.

B. Rodents shall be controlled.

C. Weed growth shall be killed before the weeds reach the seed stage of growth or exceed 6 inches in length, whichever occurs first.

D. Weeds in plant basins, including basin walls, shall be removed by hand pulling, after the plants have been planted.

**Weed Control**

Weed control shall also conform to the following:

A. Stolon type weeds shall be killed with glyphosate.

**PESTICIDES**

Pesticides used to control weeds shall conform to the provisions in Section 20-4.026, "Pesticides," of the State Standard Specifications. Except as otherwise provided in these special provisions, pesticide use shall be limited to the following materials:

Glyphosate
Imazapyr

Glyphosate shall be used to kill stolon type weeds.

All pesticide formulas used shall be of the type approved for use in proximity to water.

If the Contractor elects to request the use of other pesticides on this project, the request shall be submitted, in writing, to the Engineer not less than 15 days prior to the intended use of the other pesticides. Except for the pesticides listed in these special provisions, no pesticides shall be used or applied without prior written approval of the Engineer.

Pesticides shall not be applied within the limits of the plant basins. Pesticides shall not be applied in a manner that allows the pesticides to come in contact with the foliage and woody parts of the plants.

**PREPARING PLANTING AREAS**

Plants adjacent to drainage ditches shall be located so that after construction of the basins, no portion of the basin walls shall be less than the minimum distance shown on the plans for each plant involved.

**PLANTING**

Attention is directed to "Irrigation Systems Functional Test" of these special provisions regarding functional tests of the irrigation systems. Do not perform planting in an area until the functional test has been completed for the irrigation system serving that area.

**LINER PLANTS (Plant Group M)**

**GENERAL**

**Summary**

This work includes the planting and maintaining of liner plants.

**MATERIALS**

Containers must be a minimum size of 2.25” x 2.25” x 5” deep. Biodegradable containers must not be used. Plants must be removed from containers when planted.

**CONSTRUCTION**

**Application**

Plant when the soil is moist to a minimum depth of 8 inches, unless otherwise approved in writing by the Engineer.

**FOLIAGE PROTECTOR**

Foliage protectors shall be installed in conformance with the details shown on the plans and these special provisions.

Foliage protectors shall be constructed of UV-stabilized polypropylene material, shall be solid construction, and shall have a flared rim. Foliage protectors shall be a minimum of 5 inches diameter and shall be a minimum of 30 inches in length.

Each foliage protector shall be held in place with one stake at least 1 inch x 2 inches in cross sectional dimension. Stake shall be made of wood and at least 36 inches in length. Support stakes shall be installed vertically, embedded in the soil, and fastened to the plastic foliage protector at 6 inch maximum centers with plastic cable ties. Plastic foliage protector shall be snug against stakes yet loose enough to be raised for application of pesticides or to perform weeding within the plant basin.

Steel stakes shall not be used.

**PLANT ESTABLISHMENT WORK**

The plant establishment period shall be Type 1 and shall be 180 working days.

Weeds within plant basins, including basin walls, shall be controlled by hand pulling.

Noxious weeds within seeded areas and outside of plant basins shall be controlled by killing.

At the option of the Contractor, plants of a larger container size than those originally specified may be used for replacement plants during the first 125 working days of the plant establishment period.

After 125 working days of the plant establishment period have been completed, replacement of plants shall be one-gallon size for liner size plants; 5-gallon size for one-gallon and pot size plants; 15-gallon size for 5-gallon size plants; and other plant replacement plants shall be the same size as originally specified.

Previously installed filters shall be removed, cleaned and reinstalled or replaced if required at least 15 days prior to the completion of the plant establishment period.

The final inspection shall be performed in conformance with the provisions in Section 5-1.13, "Final Inspection," of the State Standard Specifications and shall be completed a minimum of 20 working days before the estimated completion of the contract.

**10-2.05 IRRIGATION SYSTEMS**

Irrigation systems shall be furnished and installed in conformance with the provisions in Section 20-5, "Irrigation Systems," of the State Standard Specifications, except materials containing asbestos fibers shall not be used.

Method A pressure testing shall conform to the provisions in Section 20-5.03H(1), "Method A", of the State Standard Specifications, except leaks that develop in the tested portion of the system shall be located and repaired after each test period when a drop of more than 5 pounds per square inch is indicated by the pressure gage. After the leaks have been repaired, the one hour pressure test shall be repeated and additional repairs made until the drop in pressure is 5 pounds per square inch or less.

Only pipeline trenches and excavation pits for supply lines being supplied from one water service point shall be open at one time. After pressure testing is complete, trenches and pits excavated for pipe supply lines, being supplied from one water service point, shall be backfilled prior to commencing excavations for pipe supply lines being supplied from another water service point.

**VALVE BOXES**

Valve boxes shall conform to the provisions in Section 20-2.24, "Valve Boxes," of the State Standard Specifications, except as otherwise provided herein.

Valve boxes shall be fiberglass.

Covers for valve boxes shall be glass fiber reinforced plastic-.

Valve boxes shall be identified on the top surface of the covers by branding the appropriate abbreviations for the irrigation facilities contained in the valve boxes as shown on the plans. Valve boxes that contain remote control valves shall be identified by the appropriate letters and numbers (controller and station numbers). The letters and numbers shall be 2 inches in height.

**BALL VALVES**

Ball valves shall be furnished and installed as shown on the plans and in conformance with these special provisions.

Ball valves shall be manufactured from Chlorinated Polyvinyl Chloride (CPVC) or polyvinyl chloride (PVC) and shall conform to the following:

| Specification | Minimum Requirement |
|---|---|
| Non-shock cold water working pressure for 3/4-inch to 4-inch valves | 235 psi |
| Non-shock cold water working pressure for 6-inch valves | 150 psi |
| Seats | PTFE (Teflon) |
| O-Ring Seals | EPDM or Viton |

Ball valves shall be of the same size as the pipeline which the valves serve, unless otherwise noted on the plans.

Ball valves shall be installed in a valve box.

**GATE VALVES**

Gate valves shall be as shown on the plans and in conformance with the provisions in Section 20-2.28, "Gate Valves," of the State Standard Specifications and these special provisions.

Gate valves, smaller than 3 inches in size, shall be furnished with a cross-handle.

Gate valves shall have a solid bronze or brass wedge.

**ELECTRIC AUTOMATIC IRRIGATION COMPONENTS**

**Irrigation Controllers (Battery)**

Irrigation controllers shall be single, solid-state independent controllers conforming to the following:

A. Irrigation controllers (battery) shall be fully automatic and shall operate a complete 14-day or longer irrigation program.
B. Irrigation controllers (battery) shall be programmable through a handheld unit.
C. The watering time of each station shall be displayed on the face of the handheld unit.
D. The irrigation controller shall be fully submersible.
E. The irrigation controller shall operate on a standard 9 volt alkaline battery.
F. Each station shall have a variable or incremental timing adjustment with a range of 720 minutes to a minimum of one minute.
G. Irrigation controllers shall be capable of a minimum of 2 program schedules.
H. Irrigation controllers shall be manufactured by the same company.

**Electric Remote Control Valves**

Electric remote control valves shall conform to the provisions in Section 20-2.23, "Control Valves," of the State Standard Specifications and the following:

A. Valves shall be glass filled nylon.
B. Valves shall be angle pattern (bottom inlet) as shown on the plans.
C. Valve solenoids for (battery) controller shall be DC potted latching and operate on 9V.

**Conductors**

Low voltage, as used in this section "Conductors," shall mean 36 V or less.

Low voltage control and neutral conductors in pull boxes and valve boxes, at irrigation controller terminals, and at splices shall be marked as follows:

A. Conductor terminations and splices shall be marked with adhesive backed paper markers or adhesive cloth wrap-around markers, with clear, heat-shrinkable sleeves sealed over the markers.
B. Non-spliced conductors in pull boxes and valve boxes shall be marked with clip-on, "C" shaped, white extruded polyvinyl chloride sleeves. Marker sleeves shall have black, indented legends of uniform depth with transparent overlays over the legends and "chevron" cuts for alignment of 2 or more sleeves.

Markers for the control conductors shall be identified with the appropriate number or letter designations of irrigation controllers and station numbers. Markers for neutral conductors shall be identified with the appropriate number or letter designations of the irrigation controllers.

The color of low voltage neutral and control conductor insulation, except for the striped portions, shall be homogeneous throughout the entire thickness of the insulation.

Insulation for conductors may be UL listed polyethylene conforming to UL44 test standards with a minimum insulation thickness of 41 mils for wire sizes 10AWG and smaller.

**IRRIGATION SYSTEMS FUNCTIONAL TEST**

Functional tests for the irrigation controllers and associated automatic irrigation systems shall conform to the provisions in Section 20-5.027J, "Testing," of the State Standard Specifications and these special provisions.

Tests shall demonstrate to the Engineer, through one complete cycle of the irrigation controllers in the automatic mode, that the associated automatic components of the irrigation systems operate properly. If automatic components of the irrigation systems fail a functional

test, these components shall be repaired at the Contractor's expense and the testing repeated until satisfactory operation is obtained.

Associated automatic components shall include, but not be limited to remote control valves.

Upon completion of work on an irrigation system, including correction of deficiencies and satisfactory functional tests for the systems involved, the plants to be planted in the area watered by the irrigation system may be planted provided the planting areas have been prepared as specified in these special provisions.

**PIPE**

**Plastic Pipe**

Plastic pipe supply lines must be polyvinyl chloride (PVC) 1120 or 1220 pressure rated pipe with the minimum pressure rating (PR) shown on the plans.

Plastic pipe supply lines less than 3 inches in diameter must have solvent cemented type joints. Primers must be used on the solvent cemented type joints.

Fittings for plastic pipe supply lines with a pressure rating (PR) of 315 must be Schedule 80.

**WATER SERVICE ASSEMBLY**

Water service assembly shall be as shown on the plans and in conformance with the provisions in Section 20.05, "Water Service Assemblies," of the City of Reedley Standard Specifications and these special provisions.

Water service assembly for the irrigation systems shall be furnished and installed by the Contractor.

**BACKFLOW PREVENTER ASSEMBLIES**

Backflow preventer assemblies shall be as shown on the plans and in conformance with the provisions in Section 20.09, "Cross-Connectin Control," of the City of Reedley Standard Specifications, Section 20-2.25, "Backflow Preventers," of the State Standard Specifications and these special provisions.

Pressure loss through the backflow preventers shall not exceed the following:

| BACKFLOW PREVENTER SIZE (Inches) | FLOW RATE (Gallons Per Minute) | PRESSURE LOSS (PSI) |
|---|---|---|
| 3/4" | 30 | 15 |

**BACKFLOW PREVENTER ASSEMBLY ENCLOSURE**

Enclosures shall be fabricated of structural steel angles and flattened expanded metal and shall be installed over backflow preventer assemblies on a portland cement concrete pad as shown on the plans and in conformance with these special provisions.

Expanded metal for sides, ends and top panels shall be fabricated from 10-gage minimum thickness, sheet steel. The flattened expanded metal openings shall be approximately 3/4-inch x 1-3/4-inch in size.

Expanded metal panels shall be attached to the 3/16-inch thick steel angle frames by a series of welds, not less than 1/4-inch in length and spaced not more than 4-inches on center, along the edges of the enclosure.

Lock-guard shall be made of a minimum thickness of 1/2-inch cold rolled steel.

Padlocks will be furnished by the Engineer.

Enclosures shall be galvanized, after fabrication, in conformance with the provisions in Section 75-1.05, "Galvanizing," of the State Standard Specifications.

Hold down bolt assemblies shall be galvanized and shall be installed when the portland cement concrete pad is still plastic. Nuts shall be hexagonal and washers shall be the lock type.

Enclosures shall be painted by the manufacturer with one application of a commercial quality pre-treatment, vinyl wash primer and a minimum of two applications of a commercial quality, exterior enamel for metal. The finish color shall be a dark green.

The quantity of backflow preventer assembly enclosures will be measured by the unit as determined from actual count in place.

The contract unit price paid for the backflow preventer assembly enclosure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing a backflow preventer assembly enclosure, complete in place, including constructing the portland cement concrete pad, as shown on the plans, as specified in the State Standard Specifications and these special provisions, and as directed by the Engineer.

**TESTING NEW BACKFLOW PREVENTERS**

New backflow preventers shall be tested for proper operation in conformance with the provisions in Section 20-5.03J, "Check and Test Backflow Preventers," of the State Standard Specifications and these special provisions.

Tests for new backflow preventers shall be satisfactorily completed after installation and before operation of the irrigation systems.

New backflow preventers shall be retested one year after the satisfactory completion of the previous test, and each year thereafter until the plant establishment period is completed. An additional test shall be provided not more than 10 days prior to acceptance of the contract.

**SPRINKLERS**

Sprinklers shall conform to the type, pattern, material, and operating characteristics listed in the "Irrigation Program" shown on the plans.

**SPRINKLER (DRIP EMITTER)**

Drip emitter sprinklers shall be plastic, nonadjustable, pressure compensating emitters with automatic flushing action. Emitter shall be regulated by dual silicone diaphragms. Emitters shall have the flow rate and operating pressure range shown on the plans.

Emitters shall be installed as shown on the plans and in conformance with the manufacturer's written instructions. Two copies of the written instructions shall be furnished to the Engineer prior to installation.

Emitters shall be equipped with a 10-32 threaded inlet which shall be inserted onto a polyflex riser as shown on the plans.

**FILTER ASSEMBLY UNIT**

A filter assembly unit shall consist of a pressure regulating filter housing and a reusable filter cartridge.

Filter assembly units shall be installed within the remote control valve box as shown on the plans.

Filter assembly units shall have a built-in 40 psi pressure regulator.

Filter assembly units shall withstand a cold water working pressure of 150 psi.

Filter housings shall be manufactured of reinforced polypropylene plastic.

Filter cartridges shall be reusable stainless steel and shall be capable of 200 size mesh filtration.

**FINAL IRRIGATION SYSTEM CHECK**

A final check of new irrigation facilities shall be performed not more than 40 working days and not less than 30 working days prior to acceptance of the contract.

The length of watering cycles using potable water measured by water meters for the final check of irrigation facilities will be determined by the Engineer.

Remote control valves connected to new irrigation controllers shall be checked for automatic performance when the controllers are in automatic mode.

Unsatisfactory performance of irrigation facilities installed by the Contractor shall be repaired and rechecked at the Contractor's expense until satisfactory performance is obtained, as determined by the Engineer.

Nothing in this section "Final Irrigation System Check" shall relieve the Contractor of full responsibility for making good or repairing defective work or materials found before the formal written acceptance of the entire contract by the Director.

Full compensation for checking the irrigation systems prior to the acceptance of the contract shall be considered as included in the contract lump sum price paid for plant establishment work and no additional compensation will be allowed therefor.

**10-2.06 ESTABLISHMENT MAINTENANCE**

To ensure that the mitigation plantings meet the prescribed survival and growth criteria, plants will be monitored and maintained as needed. City staff members or their landscape contractor will provide the following maintenance for the mitigation plantings.

**PLANT WATERING**

Irrigation will be seasonally adjusted to provide the appropriate volume of water to each plant. Irrigation will be applied to all plants for a period of 3 years. Following Year 3, irrigation will not be supplied unless extreme environmental conditions warrant the need.

**WEED CONTROL**

Weeds will be removed from the immediate area around each plant as well as within the planting basin as needed. Any noxious weeds observed in the Mitigation Site will be eradicated through mechanical and/or chemical applications.

**REPLACEMENT PLANTING**

The plantings will be inspected during the performance monitoring visits to determine whether replacement plantings will be necessary to meet the mitigation success criterion.

Required replacement plantings, based on the results of the annual vegetation monitoring surveys, will be provided, installed, and maintained by the City during each year of the maintenance period. The annual monitoring reports will identify the causes of plant mortality and any remedial measures that may be required. For example, if a particular species has a high mortality rate, a determination will be made regarding the cause of plant mortality and whether replacement by another species is warranted.

Replacement will include planting enough plants that the total number of living plants meets or exceeds the success criterion. Replacement plants will be installed according to the original plant installation methods.

## 10-2.07 LONG-TERM OPERATION AND MAINTENANCE

This section addresses specific site operation and maintenance activities during the post–5-year mitigation and monitoring period. It is anticipated that during the first 5 years Establishment Period, a sufficient and healthy plant community will be established and that after this period, no plant replacement will be required. Maintenance and operations activities that will occur in perpetuity are described below.

### RESPONSIBLE PARTY

The City will be responsible for long-term operation and maintenance of the revegetation mitigation features. The City will coordinate long-term maintenance activities with the Kings River Conservation District, as needed.

### IMPLEMENTATION SCHEDULE

Operation and maintenance will occur as needed in conjunction with other City maintenance activities at the site. As is typical for native restoration plantings of this type, regular operation and maintenance are expected to be relatively minor in scope. At minimum, the Mitigation Site will be checked annually for maintenance activities listed below.

### TREE PRESERVATION

Trees and other native vegetation installed by this project will be preserved. Only those large trees that interfere with bridge maintenance or inspection, or threaten public safety should be removed by the City. Restoration trees or brush removed from the site shall be properly and legally disposed of by either complete burning or complete removal offsite.

### ELDERBERRY PRESERVATION

Elderberry shrubs occur in the mitigation site. When maintaining the site, no herbicides will be used in the revegetation area that are not approved for use near water, and no herbicides will be sprayed on or within 100 feet of elderberry shrub canopies. Weed infestations will be controlled as early as possible to prevent establishment and to minimize weed control efforts and pesticide usage.

### VOLUNTEER GROWTH

Volunteer seedlings of native species are expected to naturally colonize the mitigation site. Volunteer seedlings will be preserved unless they are competing with installed plants, are threatening public safety, or impeding access to the bridge for inspections or maintenance.

### SELECTIVE CLEARING AND PRUNING

Downed trees and branches, dead limbs, and dead trees provide habitat for numerous wildlife species. However, pruning of planted trees and targeted clearing will be conducted to promote proper structure and canopy development of planted trees, maintain access for site and bridge maintenance activities, eliminate a risk to public safety, or remove conflicts with firebreaks. Debris from clearing or pruning shall be properly and legally disposed of by either complete burning or complete removal offsite.

### WEED CONTROL

Weeds targeted for control on the revegetation site during the long-term operation and maintenance period include invasive nonnative species that can dominate the site and reduce the

desired restoration vegetation to below the performance standards. The City will determine which weed species will be targeted for control and implement control in conjunction with other City maintenance activities at the site.

**FUNDING**

Long-term operation and maintenance of the mitigation plantings will be funded by the City. Project funding will be through the Federal Highway Bridge Program (88.5%) and the City (11.5%).

**PUBLIC USE**

The public's impact on the Mitigation Site will continue to be potentially disruptive to the vegetation. The City will ensure that recreational activities do not affect the plants. If public use becomes destructive, the City will take corrective measures to replace plants and to ensure their survival.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

## IRRIGATION PROGRAM

| DETAIL REFERENCE | PLAN VIEW SYMBOL | APPURTENANCE | MODEL NUMBER | MANUFACTURER/ NOTES |
|---|---|---|---|---|
| 1/D-3 | W | WATER SERVICE POC | | WATER POINT OF CONNECTION; COORDINATE INSTALLATION OF WATER METER WITH CITY OF REEDLEY, METER SIZE SHALL BE 3/4" |
| 3/D-2 & 4/D-2 | | BACKFLOW PREVENTER AND ENCLOSURE | 825Y W/ 650A | FEBCO / REDUCED PRESSURE BACKFLOW PREVENTER WITH STRAINER; 3/4" SIZE; WITHIN CITY STANDARD ENCLOSURE (CITY STANDARD L-14) |
| 1/D-4 | | GATE VALVE | T-113-K | NIBCO GATE VALVE, OR APPROVED EQUAL, SIZE 1", IN ROUND VALVE BOX |
| 2/D-4 | A | BATTERY-OPERATED CONTROLLER | TBOS-2CMUS W/ TBOS-PSOL | RAIN BIRD / TBOS BATTERY-OPPERATED CONTROLLER WITH POTTED LATCHING SOLENOID, INSTALL WITHIN REMOTE CONTROL VALVE BOX. |
| 2/D-4 | | REMOTE CONTROL VALVE WITH FILTER & BALL VALVE | XCZ-100-PRB-COM | RAIN BIRD / COMMERCIAL CONTROL KIT - 1" PESB REMOTE CONTROL VALVE, WITH RAIN BIRD 1", 40PSI PRESSURE COMPENSATING QUICK CHECK BASKET FILTER, WITH BALL VALVE, OR APPROVED EQUAL, INSTALL IN RECTANGULAR VALVE BOX |
| 1/D-3 | | QUICK COUPLING VALVE | 33-DLRC | RAIN BIRD / 3/4" QUICK COUPLING VALVE, OR APPROVED EQUAL, WITH LOCKING COVER IN ROUND VALVE BOX |
| | NOT SHOWN | VALVE BOX | FL08TBOX - ROUND W/ FL08T LID<br>FL30TBOX12 - RECTANGULAR W/ FL30T LID | CHRISTY / 9" DIA. X 12" HIGH FIBRELYTE ROUND VALVE BOX WITH FIBRELYTE BOLD DOWN LID, OR APPROVED EQUAL<br>CHRISTY / 12" HIGH FIBRELYTE RECTANGULAR VALVE BOX WITH FIBRELYTE BOLT DOWN COVER, OR APPROVED EQUAL |
| 2/D-3 & 3/D-3 | | MAINLINE | | IRRIGATION MAINLINE, SCH 40 PLASTIC PIPE, 2" SIZE THROUGHOUT, INSTALL WARNING TAPE ABOVE LINE, 18" MINIMUM BURIAL |
| 2/D-3 & 3/D-3 | NOT SHOWN | LATERAL LINE | | IRRIGATION LATERAL, SCH 40 PLASTIC PIPE, SIZE PER CHART; PLACE PARALLEL TO CONTOURS; 12" BURIAL |
| 2/D-2 | | SLEEVING | | SCH 40 PLASTIC PIPE, SIZE SHALL BE TWICE THE DIAMETER OF THE PIPE BEING RECEIVED BY PIPE |
| 3/D-4 | NOT SHOWN | DRIP EMITTER | XB-10PC-1032 W/ PFR-FRA | RAIN BIRD / XERI-BUG PRESSURE COMPENSATING EMITTER WITH 10-32 THREADED INLET, 1.0 GPH, INSTALL ON RAIN BIRD 12" POLYFLEX RISER, OR APPROVED EQUAL, INSTALL 2 PER INDIVIDUAL PLANT AND 1 PER EACH PLANT WITHIN CLUSTERS |
| A01 \| 208 PLANTS<br>1" \| 6.93 GPM | | VALVE NUMBER<br># OF PLANTS<br>APPROXIMATE FLOW THROUGH VALVE<br>VALVE SIZE | | |

### LATERAL PIPE SIZING CHART

| NUMBER OF BUBBLERS | 1-120 | 121-240 | 241-420 |
|---|---|---|---|
| PIPE SIZE | 3/4" | 1" | 1-1/4" |

### IRRIGATION SCHEDULE

| VALVE STATION | PRECIPITATION RATE (IN/HR) | WATERING INTERVAL: DAYS PER WEEK / CYCLES PER DAY / MINUTES PER DAY | | | | | |
|---|---|---|---|---|---|---|---|
| | | NOV - FEB | MAR | APR - MAY | JUN - AUG | SEP | OCT |
| A01 | 0.19 | 2 / 1 / 20 | 5 / 1 / 20 | 5 / 2 / 18 | 5 / 2 / 25 | 5 / 2 / 18 | 5 / 1 / 23 |
| B01 | 0.19 | 2 / 1 / 20 | 5 / 1 / 20 | 5 / 2 / 18 | 5 / 2 / 25 | 5 / 2 / 18 | 5 / 1 / 23 |

## IRRIGATION NOTES

1. SEE TECHNICAL SPECIFICATIONS AND GENERAL NOTES FOR ADDITIONAL INFORMATION TO CONSIDER IN IRRIGATION SYSTEM INSTALLATION INCLUDING INFRASTRUCTURE AND UTILITIES PROTECTION AND REPAIR INFORMATION.
2. IRRIGATION MAINLINE AND EQUIPMENT ARE SHOWN DIAGRAMMATICALLY TO CONVEY INSTALLATION INTENT WITH GRAPHIC CLARITY. THE CONTRACTOR SHALL NOT INSTALL THE IRRIGATION SYSTEM AS DIAGRAMMATICALLY SHOWN IF OBSTRUCTIONS, INFRASTRUCTURE, GRADE CHANGES, OR OTHER BARRIERS EXIST IN THE FIELD THAT MIGHT NOT HAVE BEEN FORESEEN, CONSIDERED, OR IN EXISTENCE DURING IRRIGATION DESIGN. NOTIFY THE ENGINEER IF THE INSTALLATION OF THE SYSTEM IS NOT FEASIBLE AS DIAGRAMMATICALLY SHOWN PRIOR TO PROCEEDING. IF CONFLICTS ARE NOT REPORTED TO THE ENGINEER, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY CHANGES REQUIRED TO MAKE THE SYSTEM FULLY FUNCTIONAL AT NO ADDITIONAL COST TO OWNER.
3. CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE AT POINT OF CONNECTION PRIOR TO INSTALLING IRRIGATION SYSTEM. SHOULD STATIC WATER PRESSURE BE LESS THAN 35 PSI OR MORE THAN 100 PSI, CONTRACTOR SHALL NOTIFY THE ENGINEER FOR INSTRUCTIONS PRIOR TO PROCEEDING WITH INSTALLATION. THE SYSTEM DESIGN IS BASED ON 30 GPM BEING AVAILABLE AT THE POINT OF CONNECTION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE REPORTED READINGS PRIOR TO CONSTRUCTION AND SHALL CEASE CONSTRUCTION ACTIVITY AT ONCE IF AVAILABLE WATER PRESSURE AND VOLUME VARY FROM PREVIOUSLY REPORTED FIGURES. IF WATER PRESSURE AND VOLUME DISCREPANCIES ARE NOT REPORTED TO THE ENGINEER PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY NECESSARY CHANGES REQUIRED TO MAKE THE SYSTEM FULLY FUNCTIONAL AT NO ADDITIONAL COST TO OWNER.
4. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. FOLLOW ALL LOCAL CODES WHEN INSTALLING IRRIGATION SYSTEM. FOLLOW MANUFACTURER'S SPECIFICATIONS DURING INSTALLATION. NOTIFY ENGINEER OF ANY CODE CONFLICTS WITH THE DESIGN PRIOR TO STARTING WORK.
6. ALL MATERIALS AND EQUIPMENT SHALL BE NEW. THE CONTRACTOR SHALL INSTALL MATERIALS AND EQUIPMENT TO PROVIDE THE MOST EFFICIENT AND OPTIMUM OPERATING SYSTEM. FIELD ADJUSTMENTS MAY BE REQUIRED.
7. ALL TRENCHING IN AREAS UNDER EXISTING TREE CANOPIES SHALL BE DONE BY HAND.
8. THE CONTRACTOR SHALL USE COMMON TRENCHES WHEREVER POSSIBLE. COMMON TRENCHES SHALL BE LOCATED WITHIN IRRIGATED AREAS WHEREVER POSSIBLE. TRENCHES AND CONTROL VALVES SHALL BE LOCATED AT THE BACK OF WALKWAY OR TRAIL WHEREVER POSSIBLE. TRENCHES AND CONTROL VALVES SHALL BE LOCATED 12" FROM SIDEWALKS, TRAILS, OR WALLS UNLESS NOTED OTHERWISE.
9. CONTRACTOR SHALL PRESSURE AND LEAK TEST IRRIGATION LINES PRIOR TO BACKFILLING TRENCHES. CONTROLLER WIRING TO VALVES SHALL BE TESTED PRIOR TO TRENCH BACKFILLING. THE CONTRACTOR SHALL MAKE ANY ADJUSTMENTS REQUIRED TO SYSTEM TO ENSURE OPERABILITY PRIOR TO BACKFILLING TRENCHES.
10. THE FINAL LOCATION OF THE BATTERY-OPERATED CONTROLLER AND REMOTE CONTROL VALVE SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
11. THE CONTRACTOR SHALL LOCATE VALVES IN SHRUB/GROUNDCOVER/HERBACEOUS AREAS WHEREVER POSSIBLE.
12. THE CONTRACTOR SHALL PROVIDE THE ENGINEER ONE HOSE SWIVEL FOR QUICK COUPLING VALVES.
13. THE CONTRACTOR SHALL INCLUDE IN THEIR BID 1 HANDHELD CONTROLLER UNIT AND 20 EXTRA DRIP EMITTERS FOR USE IN THE INSTALLATION PROCESS FOR POSSIBLE FIELD CHANGES. THE HANDHELD CONTROLLER UNIT AND ALL EXTRA EMITTERS SHALL BE GIVEN TO THE ENGINEER AT THE END OF THE MAINTENANCE PERIOD.
14. OPERATE IRRIGATION CONTROLLER BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM.
15. PRIOR TO TRENCHING, CALL UNDERGROUND SERVICE ALERT, (800) 227-2600 FOR NORTHERN CALIFORNIA.

**IRRIGATION PROGRAM**

**I-1**

| | DATE | BY |
|---|---|---|
| REVISED | | |
| REVISED | | |

CALCULATED/ DESIGNED BY
CHECKED BY

PROJECT ENGINEER
GARRETT B. MCLAUGHLIN

AGENCY NAME
**CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS**

LAST REVISION 00-00-00

**Irrigation.dwg, Wed, 29 Feb 2012 - 10:20am, 19446**

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

A01|208 PLANTS
1" | 5.23 GPM

B01|181 PLANTS
1" | 4.42 GPM

LEGEND

REFER TO SHEET I–1 FOR IRRIGATION LEGEND

RIPARIAN PLANTING ZONE

OAK WOODLAND PLANTING ZONE

N

## IRRIGATION PLAN

SCALE: 1" = 30'

I-2

| DATE | REVISED | BY |
|---|---|---|
| | REVISED | |

CALCULATED/ DESIGNED BY

GM

CHECKED BY

PROJECT ENGINEER

GARRETT B. MCLAUGHLIN

AGENCY NAME

CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS

LAST REVISION 00-00-00

Irrigation.dwg, Fri, 24 Feb 2012 - 10:43am, 19446

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000

EA 000000

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

## GENERAL PLANTING NOTES

1. SEE TECHNICAL SPECIFICATIONS AND GENERAL NOTES FOR ADDITIONAL INFORMATION TO CONSIDER IN PLANTING INSTALLATION INCLUDING INFRASTRUCTURE AND UTILITIES PROTECTION AND REPAIR INFORMATION.
2. WITHIN 10 DAYS OF AWARD OF CONTRACT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF SPECIFIED PLANT MATERIALS ARE NOT AVAILABLE. THE CONTRACTOR SHALL PROVIDE A LIST OF PLANT MATERIAL THEY HAVE NOT BEEN ABLE TO LOCATE AND A LIST OF NO LESS THAN 10 NURSERIES OR PLANT SUPPLIERS THAT HAVE BEEN CONTACTED BY THE CONTRACTOR WHO HAVE INDICATED THEY DO NOT HAVE THE PLANT MATERIAL. THE ENGINEER WILL APPROVE ALL SUGGESTED PLANT SUBSTITUTIONS. IN THE EVENT THE ENGINEER IS NOT NOTIFIED WITHIN 10 DAYS OF THE AWARD OF CONTRACT, THE CONTRACTOR WILL BE RESPONSIBLE FOR SPECIAL ORDERING PLANT MATERIAL TO THE SATISFACTION OF THE OWNER AND THE COST WILL NOT ALTER THE ORIGINAL BID.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL PLANTS SHOWN DIAGRAMMATICALLY ON THE DRAWINGS.
4. WHERE IRRIGATION SYSTEMS ARE INSTALLED, THEY SHALL BE IN PLACE, FULLY OPERATIONAL, AND APPROVED BY CONSTRUCTION MANAGER AND ENGINEER PRIOR TO PLANTING AND SEEDING.
5. APPLY A TOPICAL SYSTEMIC HERBICIDE WHERE WEEDS ARE PRESENT PER MANUFACTURER'S SPECIFICATIONS A MINIMUM OF TEN DAYS PRIOR TO COMMENCEMENT OF ANY PLANTING OR IRRIGATION WORK. WEEDS AND TREES INCLUDING THEIR ROOTS SHALL BE ALLOWED TO COMPLETELY DIE BACK BEFORE PROCEEDING WITH WORK.
6. ALL TREES AND STUMPS DESIGNATED FOR REMOVAL MUST BE CLEARED AND REMOVED FROM THE SITE PRIOR TO PLANTING OR SEEDING.
7. PROTECT ALL EXISTING PLANT MATERIAL TO REMAIN, INCLUDING ANY INDICATED TREES. THE CONTRACTOR SHALL REPLACE, AT NO COST TO OWNER, PLANT MATERIAL INDICATED AS EXISTING ON PLANS THAT IS DAMAGED OR ALLOWED TO DIE AS A RESULT OF THE NEGLIGENCE OF THE CONTRACTOR.
8. PROTECTION FENCING SHALL BE IN PLACE PRIOR TO PLANTING.
9. CONTRACTOR SHALL MAINTAIN ALL PLANTING WORK FOR A PERIOD OF 180 CONTINUOUS CALENDAR DAYS (PLANT MAINTENANCE PERIOD). THE 180 DAY MAINTENANCE PERIOD SHALL BEGIN IMMEDIATELY FOLLOWING THE FINAL ACCEPTANCE OF THE INSTALLATION. ALL SITE PREPARATION AND SOIL AMENDMENTS SHALL BE COMPLETED AND APPROVED BY THE ENGINEER PRIOR TO INITIATING PLANTING.
10. ALL CONTAINER PLANTS MUST BE PLANTED WITHIN 3 WORKING DAYS FOLLOWING DELIVERY TO THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND PROTECTING ALL PLANTS AND MATERIALS STORED ON-SITE.
11. PLANTING ZONES SHALL BE LOCATED BY THE ENGINEER. ONCE ALL THE CONTAINER PLANT LOCATIONS HAVE BEEN FLAGGED, THE CONTRACTOR SHALL ACQUIRE FINAL APPROVAL FROM THE ENGINEER PRIOR TO EXCAVATING PLANTING HOLES.
12. TREES SHALL NOT BE PLANTED WITHIN 5 FEET OF A WATER MAIN AS MEASURED FROM THE EDGE OF THE TRUNK.
13. THE CONTRACTOR SHALL ENSURE PLANTING PITS HAVE POSITIVE DRAINAGE PRIOR TO PLANTING. PLANTING HOLES SHALL BE FILLED WITH WATER AND ALLOWED TO DRAIN COMPLETELY A MAXIMUM OF 24 HOURS BEFORE PLANTING CONTAINER PLANTS. IF THE PLANTING HOLE DOES NOT COMPLETELY DRAIN WITHIN ONE HOUR OF FILLING PLANTING HOLE OR IF AN IMPERMEABLE SOIL LAYER SUCH AS HARDPAN EXISTS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH PLANTING.
14. PLANTING AND SEEDING SHALL ONLY OCCUR WHEN ENVIRONMENTAL CONDITIONS ARE FAVORABLE FOR SUCH ACTIVITIES, BASED ON STANDARD HORTICULTURAL PRACTICES. PLANTING OR SEEDING SHALL NOT TAKE PLACE IF TEMPERATURES ARE UNSEASONABLY HIGH OR IF THE SITE IS EXCESSIVELY WET OR MUDDY.
15. CONTAINER PLANTS SHALL BE PLANTED PER DETAIL(S), AND SHALL BE WATERED IN THOROUGHLY IMMEDIATELY AFTER BEING PLANTED.
16. SEEDING SHALL OCCUR ONLY AFTER THE ENGINEER HAS OBSERVED AND APPROVED THAT THE SITE HAS BEEN PROPERLY PREPARED.
17. ALL NATIVE SPECIES SEED TO BE COLLECTED FROM WITHIN THE PROJECT VICINITY IF POSSIBLE.
18. SEEDING SHALL BE APPLIED AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

## RESTORATION SEED MIX

| PLANTING ZONE | SPECIES NAME | | APPLICATION RATE (BULK LBS/ACRE) |
|---|---|---|---|
| | BOTANICAL NAME | COMMON NAME | |
| ALL DISTURBED AREAS | ELYMUS TRACHYCAULUS | SLENDER WHEATGRASS | 9.25 |
| | ELYMUS TRITICOIDES | CREEPING WILDRYE | 3.25 |
| | ESCHSCHOLZIA CALIFORNICA | CALIFORNIA POPPY | 1.00 |
| | GRINDELIA CAMPORUM | GUMPLANT | 1.25 |
| | HORDEUM BRACHYANTHERUM | MEADOW BARLEY | 9.00 |
| | STIPA CERNUA | NODDING NEEDLE GRASS | 2.75 |
| | | TOTAL | 26.50 |

## RESTORATION PLANTING PROGRAM

| SYMBOL | PLANTING ZONE | DETAIL | SPECIES NAME | | AVERAGE PLANT SPACING (FEET ON CENTER) | PERCENTAGE OF PLANT PALETTE | CONTAINER PLANT | | CUTTING | PLANTING NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | BOTANICAL NAME | COMMON NAME | | | SIZE | QUANTITY | QUANTITY | |
| | RIPARIAN UNDERSTORY | 1/D-5 & 3/D-5 | ARTEMISIA DOUGLASIANA | MUGWORT | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 20 | TREEBAND | 18 | – | PLANT IN CLUSTERS OF 3 |
| | | | ASCLEPIAS FASCICULARIS | NARROW LEAF MILKWEED | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 10 | TREEBAND | 9 | | PLANT IN CLUSTERS OF 3 |
| | | | CAREX BARBARAE | SANTA BARBARA SEDGE | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 30 | TREEBAND | 27 | – | PLANT IN CLUSTERS OF 3 |
| | | | ELYMUS TRITICOIDES | CREEPING WILDRYE | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 15 | TREEBAND | 25 | – | PLANT IN CLUSTERS OF 5 |
| | | | MIMULUS GUTTATUS | YELLOW MONKEYFLOWER | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 10 | TREEBAND | 9 | – | PLANT IN CLUSTERS OF 3 |
| | | | VITIS CALIFORNICA | CALIFORNIA GRAPE | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 15 | TREEBAND | 15 | – | PLANT IN CLUSTERS OF 3 |
| | RIPARIAN OVERSTORY | 2/D-5 | CEPHALANTHUS OCCIDENTALIS | BUTTONBUSH | 10' O.C. | 10 | 1 GAL | 12 | – | |
| | | 4/D-5 | FRAXINUS LATIFOLIA | OREGON ASH | 20' O.C. | 5 | TREEPOT 4 | 2 | – | |
| | | | JUGLANS HINDSII | CALIFORNIA BLACK WALNUT | 20' O.C. | 5 | TREEPOT 4 | 2 | – | |
| | | 5/D-5 | POPULUS FREMONTII | FREMONT COTTONWOOD | 10' O.C. | 20 | CUTTING | – | 24 | |
| | | 4/D-5 | QUERCUS LOBATA | VALLEY OAK | 20' O.C. | 10 | TREEPOT 4 | 3 | – | |
| | | 5/D-5 | SALIX EXIGUA | NARROW-LEAVED WILLOW | 8' O.C. | 20 | CUTTING | – | 38 | |
| | | | SALIX GOODDINGII | BLACK WILLOW | 8' O.C. | 30 | CUTTING | – | 57 | |
| | OAK WOODLAND UNDERSTORY | 1/D-5 & 3/D-5 | ARTEMISIA DOUGLASIANA | MUGWORT | 2' O.C. WITHIN CLUSTERS, 15' O.C. BETWEEN CLUSTERS | 20 | TREEBAND | 21 | – | PLANT IN CLUSTERS OF 3 |
| | | | ASCLEPIAS FASCICULARIS | NARROW LEAF MILKWEED | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 15 | TREEBAND | | | PLANT IN CLUSTERS OF 3 |
| | | | CAREX BARBARAE | SANTA BARBARA SEDGE | 2' O.C. WITHIN CLUSTERS, 15' O.C. BETWEEN CLUSTERS | 10 | TREEBAND | 6 | – | PLANT IN CLUSTERS OF 3 |
| | | | ELYMUS TRITICOIDES | CREEPING WILDRYE | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 40 | TREEBAND | 40 | – | PLANT IN CLUSTERS OF 5 |
| | | | EUTHAMIA OCCIDENTALIS | WESTERN GOLDENROD | 2' O.C. WITHIN CLUSTERS, 20' O.C. BETWEEN CLUSTERS | 15 | TREEBAND | | | PLANT IN CLUSTERS OF 5 |
| | OAK WOODLAND OVERSTORY | 2/D-5 | CERCIS OCCIDENTALIS | WESTERN REDBUD | 12' O.C. | 5 | 1 GAL | 2 | – | |
| | | 4/D-5 | JUGLANS HINDSII | CALIFORNIA BLACK WALNUT | 20' O.C. | 10 | TREEPOT 4 | 1 | – | |
| | | | QUERCUS LOBATA | VALLEY OAK | 12' O.C. | 75 | TREEPOT 4 | 28 | – | |
| | | 2/D-5 | FRANGULA CALIFORNICA | COFFEEBERRY | 12' O.C. | 10 | 1 GAL | 4 | – | |

## PLANTING PROGRAM NOTES:

1. UNDERLINED PORTIONS OF BOTANICAL NAME INDICATE ABBREVIATIONS USED ON PLANTING PLANS.
2. ALL DISTURBED AREAS SHALL BE HYDROSEEDED WITH RESTORATION SEED MIX PER SPECIFICATIONS.
3. PLANTS SHALL BE RANDOMLY PLACED AT VARIOUS ON-CENTER SPACINGS, AVERAGE SPACING IS PROVIDED FOR QUANTITY CALCULATION PURPOSES ONLY. REFER TO DETAIL 7/D-4.
4. PLANT LOCATIONS SHALL BE STAKED AND APPROVED BY THE ENGINEER PRIOR TO PLANT INSTALLATION.
5. TREEBAND CONTAINER SIZE SHALL BE 2.25 INCHES SQ. X 5 INCHES LONG.
6. 1 GALLON CONTAINER SIZE SHALL BE 6 INCHES DIA. X 7 INCHES LONG.
7. TREEPOT 4 CONTAINER SIZE SHALL BE 4 INCHES SQ. X 14 INCHES LONG.

**PLANTING PROGRAM**

**P-1**

| REVISED BY | DATE | GM | CALCULATED/ DESIGNED BY | CHECKED BY |
|---|---|---|---|---|
| REVISED | | | | |

PROJECT ENGINEER
GARRETT B. MCLAUGHLIN

AGENCY NAME
**CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS**

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00

Planting.dwg, Fri, 24 Feb 2012 - 11:11am, 19446

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

**90% SUBMITTAL**

REGISTERED CIVIL ENGINEER

LICENSED LANDSCAPE ARCHITECT
Signature
Renewal Date
Date
STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

ICF INTERNATIONAL
*630 K Street, Suite 400*
*Sacramento, CA 95814*
*(916) 737-3000*

INSTALL INFORMATIONAL SIGN, LOCATION TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION (1 / D-1)

9 ART DOU
3 ASC FAS
3 CAR BAR
2 CER OCC
15 ELY TRI
5 EUT OCC
3 FRA CAL
1 JUG HIN
23 QUE LOB

3 ART DOU
3 CAR BAR
1 CEP OCC
2 POP FRE
3 SAL EXI
4 SAL GOO

6 ART DOU
3 ASC FAS
9 CAR BAR
4 CEP OCC
10 ELY TRI
1 FRA LAT
1 JUG HIN
3 MIM GUT
8 POP FRE
1 QUE LOB
12 SAL EXI
19 SAL GOOD
6 VIT CAL

6 ART DOU
3 ASC FAC
3 CAR BAR
1 CER OCC
10 ELY TRI
2 FRA CAL
1 JUG HIN
17 QUE LOB

3 ART DOU
3 ASC FAS
6 CAR BAR
3 CEP OCC
5 ELY TRI
1 JUG HIN
3 MIM GUT
5 POP FRE
1 QUE LOB
8 SAL EXI
12 SAL GOO
3 VIT CAL

12 ELDERBERRY TRANSPLANTS

3 ART DOU
3 CAR BAR
2 CEP OCC
5 ELY TRI
3 MIM GUT
4 POP FRE
7 SAL EXI
10 SAL GOO
3 VIT CAL

INSTALL INFORMATIONAL SIGN, LOCATION TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION (1 / D-1)

3 ART DOU
3 ASC FAS
6 CAR BAR
2 CEP OCC
5 ELY TRI
1 FRA LAT
5 POP FRE
1 QUE LOB
8 SAL EXI
12 SAL GOO
3 VIT CAL

3 ART DOU
3 CAR BAR
5 ELY TRI
5 EUT OCC
1 FRA CAL
8 QUE LOB

INSTALL INFORMATIONAL SIGN, LOCATION TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION (1 / D-1)

LEGEND
- RIPARIAN PLANTING ZONE
- OAK WOODLAND PLANTING ZONE
- EXISTING ELDERBERRIES TO BE TRANSPLANTED TO MITIGATION BANK

N

**PLANTING PLAN**

SCALE: 1" = 30'

**P-2**

| DATE | REVISED BY | REVISED |
|---|---|---|
| GM | | |
| CALCULATED/ DESIGNED BY | | |
| CHECKED BY | | |

PROJECT ENGINEER
GARRETT B. MCLAUGHLIN

AGENCY NAME
**CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS**

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES
0 1 2 3

CU 00000 EA 000000

LAST REVISION 00-00-00

Planting.dwg, Wed, 22 Feb 2012 - 12:33pm, 19446

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

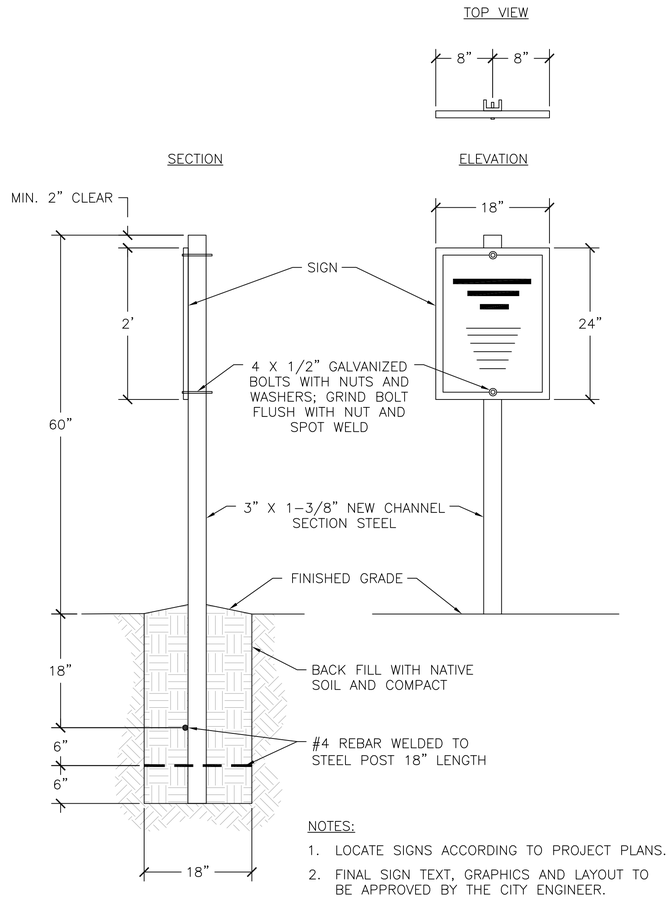
REGISTERED CIVIL ENGINEER

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

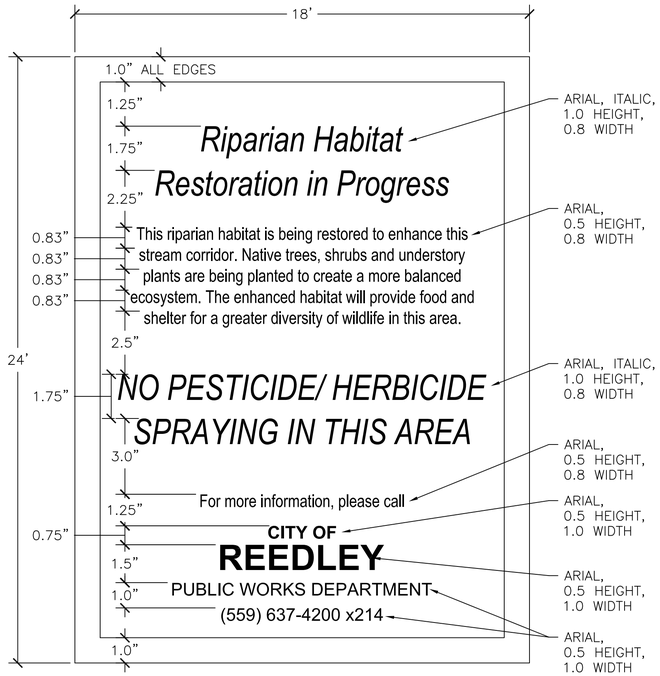
ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000




NOTES:

1. LOCATE SIGNS ACCORDING TO PROJECT PLANS.
2. FINAL SIGN TEXT, GRAPHICS AND LAYOUT TO BE APPROVED BY THE CITY ENGINEER.

1 / D-1 INFORMATIONAL SIGN
NOT TO SCALE




NOTES:

1. CENTER ALL TEXT HORIZONTALLY ON SIGN.
2. FINAL SIGN TEXT, GRAPHICS AND LAYOUT TO BE APPROVED BY THE CITY ENGINEER.

SIGN PANEL LAYOUT

**MISCELLANEOUS DETAILS**

**D-1**

| DATE | REVISED BY | REVISED |
|---|---|---|
| | | |

CALCULATED/ DESIGNED BY
CHECKED BY
GM

PROJECT ENGINEER
GARRETT B. MCLAUGHLIN

AGENCY NAME
**CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS**

LAST REVISION: 00-00-00
**Details.dwg, Wed, 22 Feb 2012 - 2:23pm, 19446**

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

**90% SUBMITTAL**

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

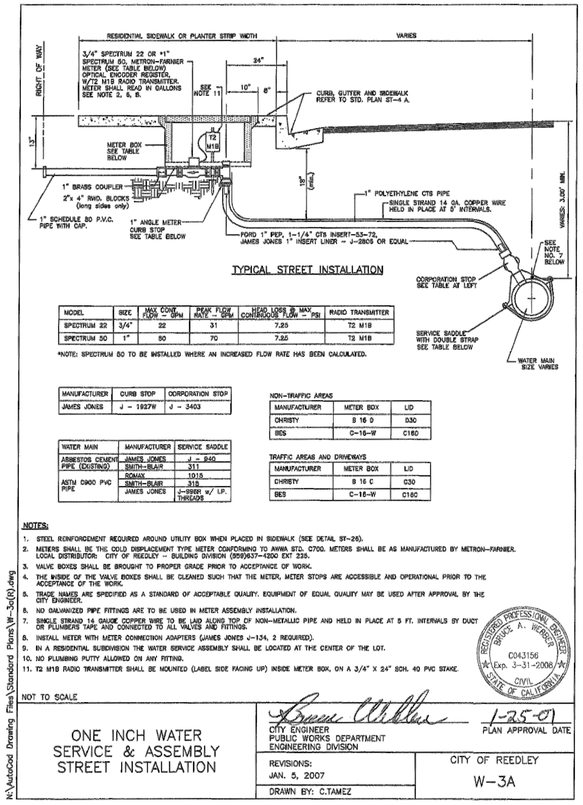
| DATE | REVISED BY |
|---|---|
| | REVISED |

CALCULATED/ DESIGNED BY: GM

CHECKED BY:

PROJECT ENGINEER: GARRETT B. MCLAUGHLIN

AGENCY NAME: CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS




## TYPICAL STREET INSTALLATION

| MODEL | SIZE | MAX CONT. FLOW – GPM | PEAK FLOW RATE – GPM | HEAD LOSS @ MAX CONTINUOUS FLOW – PSI | RADIO TRANSMITTER |
|---|---|---|---|---|---|
| SPECTRUM 22 | 3/4" | 22 | 31 | 7.25 | T2 M1B |
| SPECTRUM 50 | 1" | 50 | 70 | 7.25 | T2 M1B |

*NOTE: SPECTRUM 50 TO BE INSTALLED WHERE AN INCREASED FLOW RATE HAS BEEN CALCULATED.

| MANUFACTURER | CURB STOP | CORPORATION STOP |
|---|---|---|
| JAMES JONES | J – 1927W | J – 3403 |

| WATER MAIN | MANUFACTURER | SERVICE SADDLE |
|---|---|---|
| ARMSTRONG CEMENT PIPE (DUSTING) | JAMES JONES | J – 940 |
| | SMITH-BLAIR | 311 |
| | ROMAN | 1015 |
| ASTM D900 PVC PIPE | SMITH-BLAIR | 318 |
| | JAMES JONES | J-9989 W/ I.P. THREADS |

NON-TRAFFIC AREAS

| MANUFACTURER | METER BOX | LID |
|---|---|---|
| CHRISTY | B 16 D | D30 |
| BES | C-16-W | C16D |

TRAFFIC AREAS AND DRIVEWAYS

| MANUFACTURER | METER BOX | LID |
|---|---|---|
| CHRISTY | B 16 C | C30 |
| BES | C-16-W | C16D |

**NOTES:**

1. STEEL REINFORCEMENT REQUIRED AROUND UTILITY BOX WHEN PLACED IN SIDEWALK (SEE DETAIL ST-26).
2. METERS SHALL BE THE COLD DISPLACEMENT TYPE METER CONFORMING TO AWWA STD. C700. METERS SHALL BE AS MANUFACTURED BY METRON-FARNIER. LOCAL DISTRIBUTOR: CITY OF REEDLEY – BUILDING DIVISION (559)637-4200 EXT 225.
3. VALVE BOXES SHALL BE BROUGHT TO PROPER GRADE PRIOR TO ACCEPTANCE OF WORK.
4. THE INSIDE OF THE VALVE BOXES SHALL BE CLEANED SUCH THAT THE METER, METER STOPS ARE ACCESSIBLE AND OPERATIONAL PRIOR TO THE ACCEPTANCE OF THE WORK.
5. TRADE NAMES ARE SPECIFIED AS A STANDARD OF ACCEPTABLE QUALITY. EQUIPMENT OF EQUAL QUALITY MAY BE USED AFTER APPROVAL BY THE CITY ENGINEER.
6. NO GALVANIZED PIPE FITTINGS ARE TO BE USED IN METER ASSEMBLY INSTALLATION.
7. SINGLE STRAND 14 GAUGE COPPER WIRE TO BE LAID ALONG TOP OF NON-METALLIC PIPE AND HELD IN PLACE AT 5 FT. INTERVALS BY DUCT OR PLUMBERS TAPE AND CONNECTED TO ALL VALVES AND FITTINGS.
8. INSTALL METER WITH METER CONNECTION ADAPTERS (JAMES JONES J-124, 2 REQUIRED).
9. IN A RESIDENTIAL SUBDIVISION THE WATER SERVICE ASSEMBLY SHALL BE LOCATED AT THE CENTER OF THE LOT.
10. NO PLUMBING PUTTY ALLOWED ON ANY FITTING.
11. T2 M1B RADIO TRANSMITTER SHALL BE MOUNTED (LABEL SIDE FACING UP) INSIDE METER BOX, ON A 3/4" X 24" SCH. 40 PVC STAKE.

NOT TO SCALE

ONE INCH WATER SERVICE & ASSEMBLY STREET INSTALLATION

CITY ENGINEER, PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION — PLAN APPROVAL DATE 1-25-07

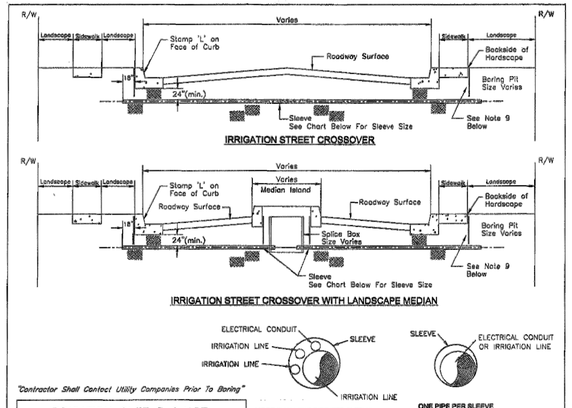
REVISIONS: JAN. 5, 2007

DRAWN BY: C.TAMEZ

CITY OF REEDLEY W-3A

K:\AutoCad Drawing Files\Standard Plans\W-3a(R).dwg

1 / D-2 WATER SERVICE POC — NOT TO SCALE




## IRRIGATION STREET CROSSOVER

## IRRIGATION STREET CROSSOVER WITH LANDSCAPE MEDIAN




*"Contractor Shall Contact Utility Companies Prior To Boring"*

MORE THAN ONE PIPE PER SLEEVE — ONE PIPE PER SLEEVE

IRRIGATION SLEEVE CHART
INCREASE SLEEVE SIZE AS REQUIRED PER THIS CHART FOR MORE THAN ONE PIPE PER SLEEVE

| PVC PIPE SIZE | SLEEVE SIZE | | |
|---|---|---|---|
| | UNDER 18 Ft. | OVER 18 Ft. UNDER 28 Ft. | OVER 28 Ft. |
| 1/2" | 1" | 1-1/4" | 1-1/2" |
| 3/4" | 1-1/4" | 1-1/2" | 2" |
| 1" | 1-1/2" | 2" | 2" |
| 1"-1/4" | 2" | 2-1/2" | 2-1/2" |
| 1"-1/2" | 2-1/2" | 2-1/2" | 3" |
| 2" | 3" | 3" | 3" |
| 2-1/2" | 3" | 3" | 4" |
| 3" | 4" | 5" | 5" |
| 3-1/2" | 5" | 5" | 6" |
| 4" | 5" | 6" | 6" |
| 5" | 6" | 8" | 8" |
| 6" | 8" | 8" | 8" |

NOTES:

1. All piping and fittings shall be Schedule 40 PVC unless approved equal by the City Engineer.
2. Where conduit (sleeve only) is installed, one pull wire or rope shall be installed. The lenght of wire or rope shall extend 6 ft. pass each end of the conduit. Each conduit (sleeve) shall be capped at each end.
3. All material used shall be new and free from imperfections.
4. See approved landscape/irrigation plans and legends for specific model numbers, size, manufacturer's, and performance requirements.
5. All transitions from galvanized pipe to PVC shall be constructed with Schedule 40 female adapter or approved equal by the City Engineer.
6. All irrigation installation shall be in accordance with City Standards, the latest edition of the Uniform Plumbing Code, manufacturer's recommendations, and as directed by the City Engineer.
7. Verify all measurements and specific site conditions in the field.
8. Route pipe(s) as required as per approved landscape/irrigation plans.
9. Install 2"x4"x24" redwood stakes at each end of sleeve at hardscape. Top of redwood stake 1-inch below top of hardscape.
10. The method used for boring shall be reviewed and approved by the City Engineer prior to start of operation.
11. Any and all changes shall be approved by the City Engineer prior to construction.

NOT TO SCALE

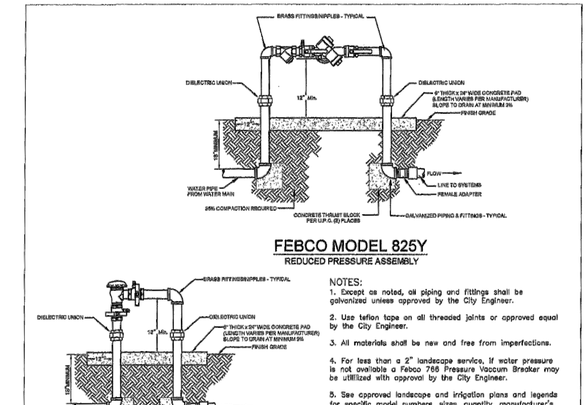
IRRIGATION SLEEVEND(S) DETAIL

CITY ENGINEER, PUBLIC WORKS DEPARTMENT — PLAN APPROVAL DATE 10-10-02

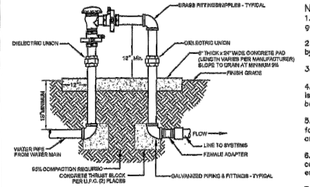
REVISIONS: Sept 2002

CITY OF REEDLEY L-10

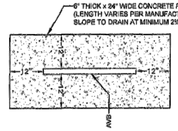
2 / D-2 PIPE SLEEVING — NOT TO SCALE




## FEBCO MODEL 825Y
REDUCED PRESSURE ASSEMBLY




## FEBCO MODEL 766
PRESSURE VACUUM BREAKER




## CONCRETE SLAB PLAN
REQUIRED ON ALL ASSEMBLIES

NOTES:

1. Except as noted, all piping and fittings shall be galvanized unless approved by the City Engineer.
2. Use teflon tape on all threaded joints or approved equal by the City Engineer.
3. All materials shall be new and free from imperfections.
4. For less than a 2" landscape service, if water pressure is not available a Febco 765 Pressure Vaccum Breaker may be utilitized with approval by the City Engineer.
5. See approved landscape and irrigation plans and legends for specific model numbers, sizes, quantity, manufacturer's, and performance requirements.
6. All transitions from galvanized pipe to PVC shall be constructed with Schedule 40 female adapter or approved equal by the City Engineer.
7. A 6 ft. thick reinforced concrete slab is required for all water protection devices. Minimum clearance shall be 1 ft. on all sides of the device and as directed by the City Engineer.
8. All irrigation installation shall be in accordance with City standards, the latest accepted edition on the Uniform Plumbing Code, manufacture's recommendation, and as directed by the City Engineer.
9. Any and all changes shall be approved by the City Engineer before construction.
10. Before acceptance of work by the City, the backflow preventer shall be tested and certified by a licensed Backflow Plumber. Certification shall be delivered to the City Engineer.

NOT TO SCALE

POTABLE WATER PROTECTION

CITY ENGINEER, PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION — PLAN APPROVAL DATE 1-25-07

REVISIONS: JAN. 2007

CITY OF REEDLEY L-3

K:\AutoCad Drawing Files\Standard Plans\Landscape\L-3.dwg

3 / D-2 BACKFLOW PREVENTER — NOT TO SCALE

K:\AutoCad Drawing Files\Standard Plans\L-14.dwg

LANDSCAPE IRRIGATION BACKFLOW ENCLOSURE

NOT TO SCALE

NOTES:

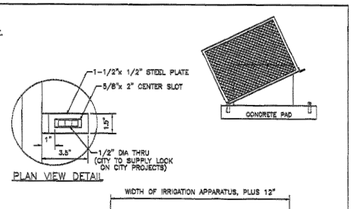
1. PAINT ALL METAL SURFACES WITH 2 COATS DARK GREEN ENAMEL OVER A PRIMER BASE.
2. FRAME CONSTRUCTED OF 1 1/2" BY 1 1/2" ANGLE IRON.
3. CONCRETE SHALL BE CLASS "B" (5 SACK).
4. 1/2"ø 2" HEX CAP SCREW, GRADE 2 WITH 2 NUTS EACH.
5. PREFABRICATED SINGLE-LIFT OR DOUBLE-LIFT BACKFLOW ENCLOSURES AVAILABLE FROM NATIONAL WATERWORKS, 2851 E. BYRD AVE. #101, FRESNO, CA 93708 PHONE 559-237-7488, FAX 559-237-8423, SEE TABLES BELOW FOR SIZING.

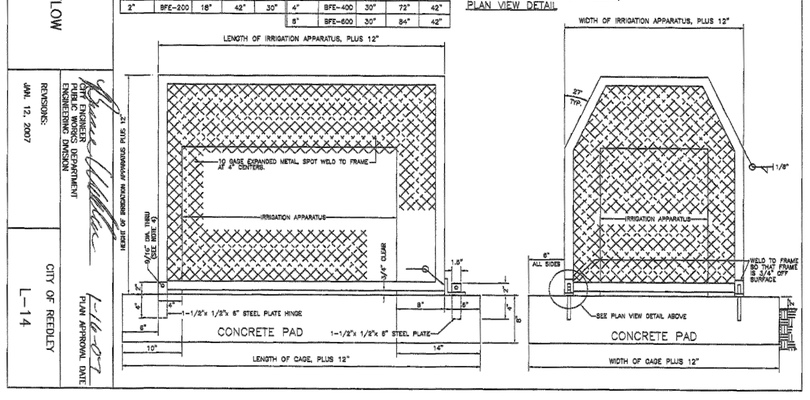
SIZING FOR SINGLE-LIFT ENCLOSURES

| VALVE SIZE | PART # | WIDTH | LENGTH | HEIGHT |
|---|---|---|---|---|
| 1" | BFE-100 | 12" | 30" | 24" |
| 1-1/2" | BFE-200 | 18" | 42" | 30" |
| 2" | BFE-200 | 18" | 42" | 30" |

SIZING FOR DOUBLE-LIFT ENCLOSURES

| VALVE SIZE | PART # | WIDTH | LENGTH | HEIGHT |
|---|---|---|---|---|
| 2-1/2" | BFE-250 | 24" | 60" | 36" |
| 3" | BFE-400 | 30" | 72" | 42" |
| 4" | BFE-400 | 30" | 72" | 42" |
| 6" | BFE-600 | 30" | 84" | 42" |




CITY ENGINEER, PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION — PLAN APPROVAL DATE 1-16-07

REVISIONS: JAN. 12, 2007

CITY OF REEDLEY L-14

4 / D-2 BACKFLOW ENCLOSURE — NOT TO SCALE

## IRRIGATION DETAILS
**D-2**

LAST REVISION: 00-00-00

Details.dwg, Wed, 22 Feb 2012 - 2:49pm, 19446

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

REGISTERED CIVIL ENGINEER

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

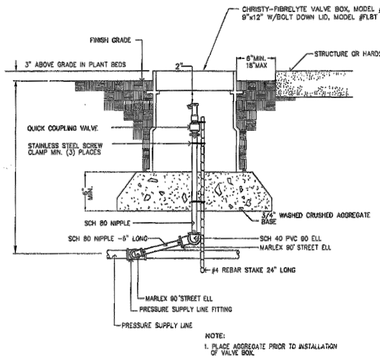
ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

| | DATE | REVISED BY |
|---|---|---|
| | | REVISED |

CALCULATED/ DESIGNED BY: GM
CHECKED BY:

PROJECT ENGINEER: GARRETT B. MCLAUGHLIN

AGENCY NAME: CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS



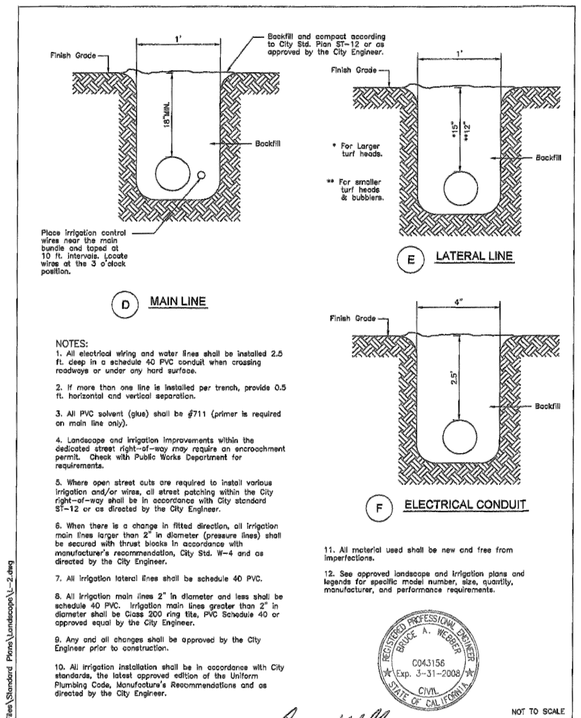

W **QUICK COUPLER**

NOTES:
1. Use teflon tape tape on all threaded joints or as approved by City Engineer.
2. All risers and nipples shall be Schedule 80 PVC.
3. All fittings shall be Schedule 40 PVC.
4. All laterals shall be Schedule 40 PVC or as noted on the landscape/irrigation plans.
5. All irrigation installation shall be in accordance with City standards, the latest edition of the Uniform Plumbing Code, manufacturer's recommendation and as directed by the City Engineer.
6. All materials shall be new and free from defects.
7. See approved landscape/irrigation plans and legends for specific model numbers, size, quantities, manufacturer's, and performance requirements.
8. Any and all changes from this standard shall be approved by the City Engineer prior to any type of construction.

NOT TO SCALE

| | | |
|---|---|---|
| QUICK COUPLER VALVE DETAIL | CITY ENGINEER, PUBLIC WORKS DEPARTMENT — 10-10-02 PLAN APPROVAL DATE<br>REVISIONS: Sept 2002 | CITY OF REEDLEY L-7 |

1 / D-3 QUICK COUPLING VALVE




NOTES:
1. All electrical wiring and water lines shall be installed 2.5 ft. deep in a schedule 40 PVC conduit when crossing roadways or under any hard surface.
2. If more than one line is installed per trench, provide 0.5 ft. horizontal and vertical separation.
3. All PVC solvent (glue) shall be #711 (primer is required on main line only).
4. Landscape and irrigation improvements within the dedicated street right-of-way may require an encroachment permit. Check with Public Works Department for requirements.
5. Where open street cuts are required to install various irrigation and/or wires, all street patching within the City right-of-way shall be in accordance with City standard ST-12 or as directed by the City Engineer.
6. When there is a change in fitted direction, all irrigation main lines larger than 2" in diameter (pressure lines) shall be secured with thrust blocks in accordance with manufacturer's recommendation, City Std. W-4 and as directed by the City Engineer.
7. All irrigation lateral lines shall be schedule 40 PVC.
8. All irrigation main lines 2" in diameter and less shall be schedule 40 PVC. Irrigation main lines greater than 2" in diameter shall be Class 200 ring tite, PVC Schedule 40 or approved equal by the City Engineer.
9. Any and all changes shall be approved by the City Engineer prior to construction.
10. All irrigation installation shall be in accordance with City standards, the latest approved edition of the Uniform Plumbing Code, Manufacture's Recommendations and as directed by the City Engineer.
11. All material used shall be new and free from imperfections.
12. See approved landscape and irrigation plans and legends for specific model number, size, quantity, manufacturer, and performance requirements.

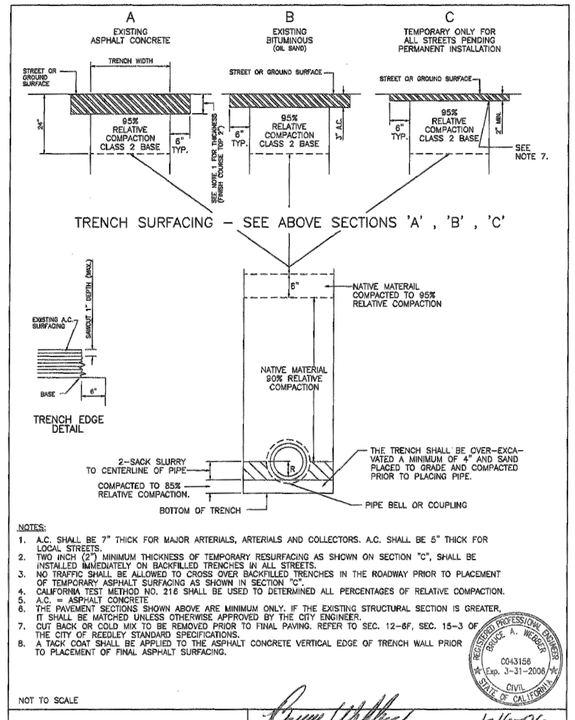
REGISTERED PROFESSIONAL ENGINEER — BRUCE A. WEBBER — C043156 Exp. 3-31-2008 — CIVIL — STATE OF CALIFORNIA

NOT TO SCALE

| | | |
|---|---|---|
| CONDUIT AND IRRIGATION PIPING TRENCHING AND BACKFILL | CITY ENGINEER, PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION — 1-16-07 PLAN APPROVAL DATE<br>REVISIONS: JAN. 12, 2007 | CITY OF REEDLEY L-2 |

N:\AutoCad Drawing Files\Standard Plans\Landscape\L-2.dwg

2 / D-3 PIPE TRENCHING
NOT TO SCALE




NOTES:
1. A.C. SHALL BE 7" THICK FOR MAJOR ARTERIALS, ARTERIALS AND COLLECTORS. A.C. SHALL BE 5" THICK FOR LOCAL STREETS.
2. TWO INCH (2") MINIMUM THICKNESS OF TEMPORARY RESURFACING AS SHOWN ON SECTION "C", SHALL BE INSTALLED IMMEDIATELY ON BACKFILLED TRENCHES IN ALL STREETS.
3. NO TRAFFIC SHALL BE ALLOWED TO CROSS OVER BACKFILLED TRENCHES IN THE ROADWAY PRIOR TO PLACEMENT OF TEMPORARY ASPHALT SURFACING AS SHOWN IN SECTION "C".
4. CALIFORNIA TEST METHOD NO. 216 SHALL BE USED TO DETERMINED ALL PERCENTAGES OF RELATIVE COMPACTION.
5. A.C. = ASPHALT CONCRETE
6. THE PAVEMENT SECTIONS SHOWN ABOVE ARE MINIMUM ONLY. IF THE EXISTING STRUCTURAL SECTION IS GREATER, IT SHALL BE MATCHED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
7. CUT BACK OR COLD MIX TO BE REMOVED PRIOR TO FINAL PAVING. REFER TO SEC. 12-6F, SEC. 15-3 OF THE CITY OF REEDLEY STANDARD SPECIFICATIONS.
8. A TACK COAT SHALL BE APPLIED TO THE ASPHALT CONCRETE VERTICAL EDGE OF TRENCH WALL PRIOR TO PLACEMENT OF FINAL ASPHALT SURFACING.

REGISTERED PROFESSIONAL ENGINEER — BRUCE A. WEBBER — C043156 Exp. 3-31-2008 — CIVIL — STATE OF CALIFORNIA

NOT TO SCALE

| | | |
|---|---|---|
| TRENCH BACKFILL AND SURFACE REPLACEMENT | CITY ENGINEER, PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION — 1-16-06 PLAN APPROVAL DATE<br>REVISIONS: JAN. 2006 | CITY OF REEDLEY ST-12 |

3 / D-3 TRENCH BACKFILL
NOT TO SCALE

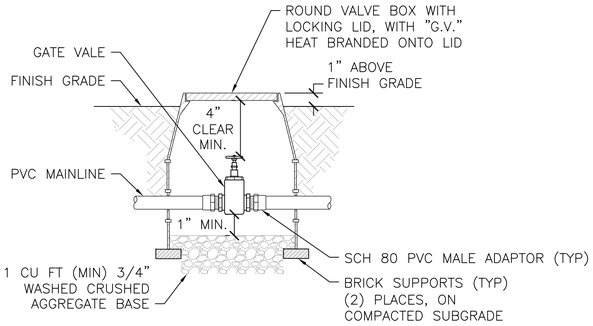
**IRRIGATION DETAILS CONT.**

**D-3**

LAST REVISION: Details.dwg, Wed, 22 Feb 2012 - 2:52pm, 19446
00-00-00

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

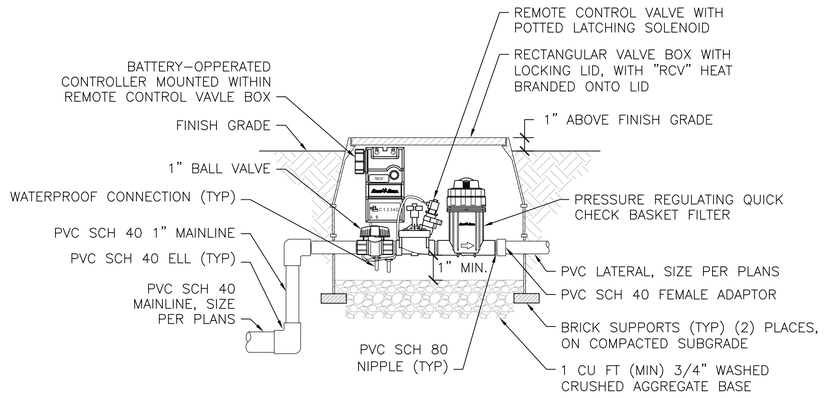



NOTES:

1. REFER TO IRRIGATION LEGEND FOR MANUFACTURERS AND MODELS.
2. INSTALL GATE VALVE A MINIMUM OF 12" FROM STRUCTURES OR HARDSCAPE
3. INSTALL GATE VALVE IN PLANTING BEDS WHEREVER POSSIBLE
4. INSTALL VALVE BOX SO THAT TOP OF BOX IS FLUSH WITH ADJACENT HARDSCAPE
5. USE TEFLON TAPE ON ALL THREADED FITTINGS.
6. PLACE 3/4" DRAIN ROCK PRIOR TO INSTALLING VALVE BOX
7. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

1 / D-4 GATE VALVE

NOT TO SCALE

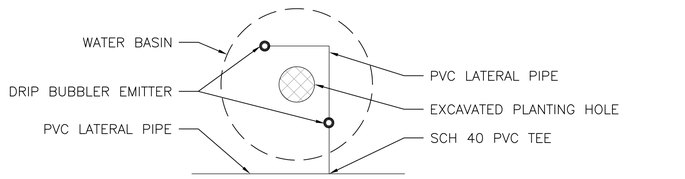



NOTES:

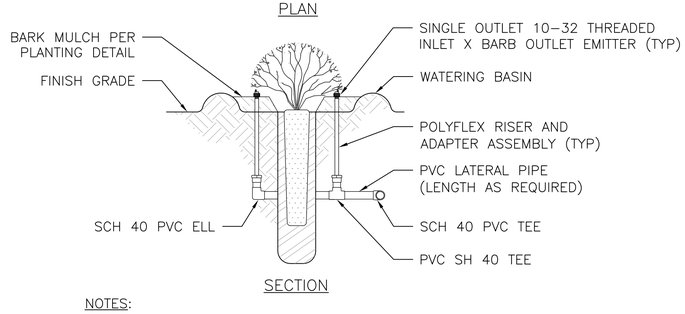
1. REFER TO IRRIGATION LEGEND FOR MANUFACTURERS AND MODELS.
2. INSTALL QUICK CHECK BASKET FILTER UPSTREAM OF CONTROL VALVE.
3. INSTALL VALVE BOX SO THAT TOP OF BOX IS FLUSH WITH ADJACENT HARDSCAPE
4. USE TEFLON TAPE ON ALL THREADED FITTINGS.
5. PLACE 3/4" DRAIN ROCK PRIOR TO INSTALLING VALVE BOX
6. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

2 / D-4 BATTERY-OPPERATED CONTROLLER AND CONTROL VALVE WITH FILTER AND BALL VALVE

NOT TO SCALE




PLAN




SECTION

NOTES:

1. LATERAL PIPE SHALL BE A MIN OF 2" AWAY FROM ROOTBALL
2. REFER TO IRRIGATION LEGEND FOR MANUFACTURERS AND MODELS AND NUMBER OF EMITTERS TO INSTALL AT EACH LOCATION.
3. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

3 / D-4 DRIP EMITTER

NOT TO SCALE

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

REGISTERED CIVIL ENGINEER

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

PLANS APPROVAL DATE

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

| DATE | REVISED BY |
|---|---|
| | REVISED |

CALCULATED/ DESIGNED BY | GM

CHECKED BY

PROJECT ENGINEER
GARRETT B. MCLAUGHLIN

AGENCY NAME
**CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS**

**IRRIGATION DETAILS CONT.**

**D-4**

LAST REVISION 00-00-00

Details.dwg, Thu, 23 Feb 2012 - 10:08am, 19446

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 EA 000000

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 06 | Fre | CR | | ___ | ___ |

90% SUBMITTAL

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — Signature — Renewal Date — Date — STATE OF CALIFORNIA

*The City of Reedley or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

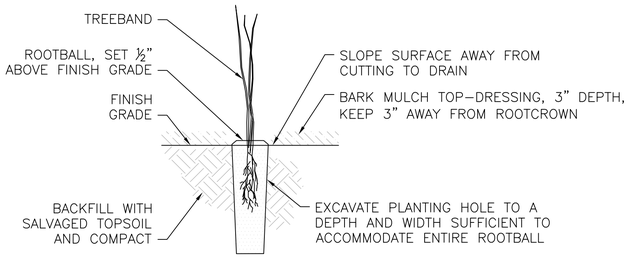
ICF INTERNATIONAL
630 K Street, Suite 400
Sacramento, CA 95814
(916) 737-3000

| DATE | REVISED BY | REVISED |
|---|---|---|
| | | |

CALCULATED/ DESIGNED BY | CHECKED BY

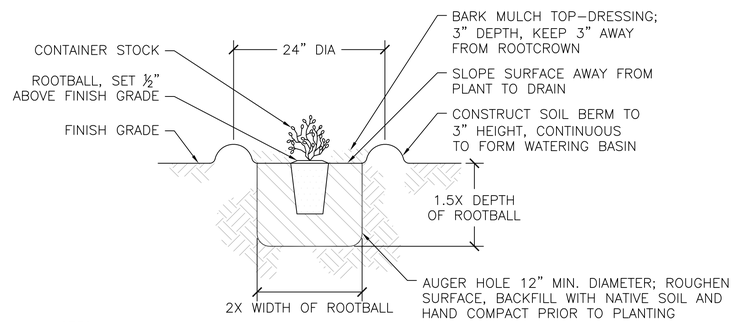
PROJECT ENGINEER
GARRETT B. MCLAUGHLIN

AGENCY NAME
CITY OF REEDLEY DEPARTMENT OF PUBLIC WORKS



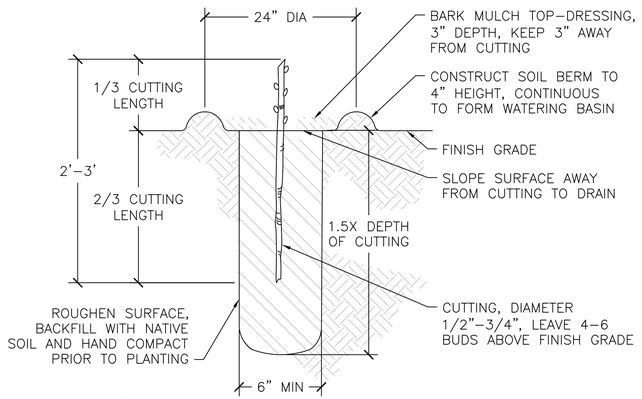

NOTES:
1. PROVIDE WEED FREE ZONE AROUND PLANTING SITE ACCORDING TO THE SPECIFICATIONS.
2. REFER TO DETAIL 3 THIS SHEET FOR CLUSTER PLANTING AND BASIN LAYOUT.
3. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

1 / D–5 TREEBAND
NOT TO SCALE



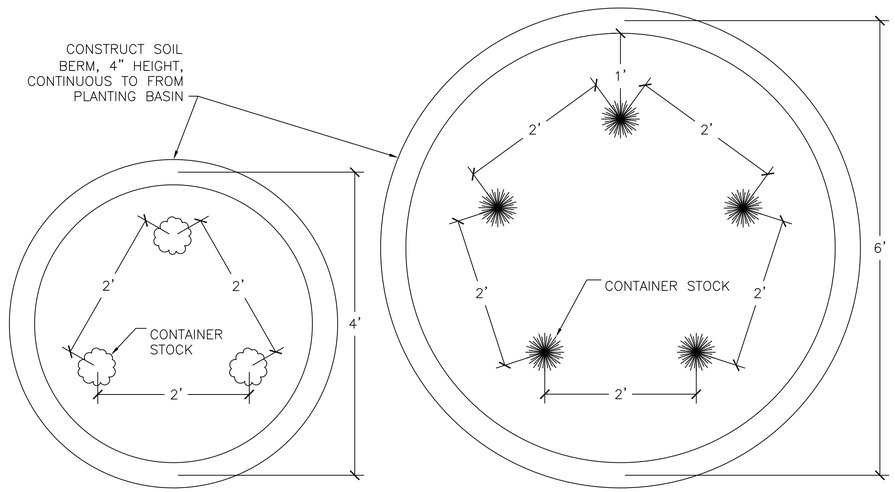

NOTES:
1. PROVIDE WEED FREE ZONE, AROUND PLANTING SITE ACCORDING TO THE SPECIFICATIONS.
2. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

2 / D–5 1–GALLON CONTAINER PLANTING
NOT TO SCALE




NOTES:
1. PROVIDE WEED FREE ZONE AROUND PLANTING SITE ACCORDING TO THE SPECIFICATIONS.
2. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

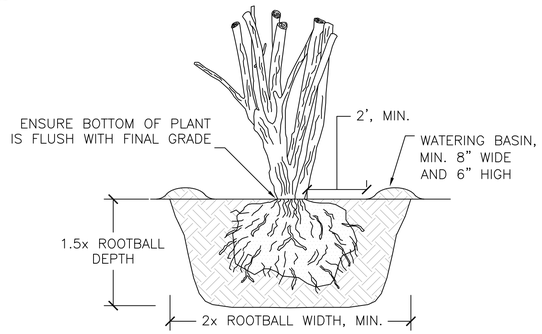
5 / D–5 CUTTING
NOT TO SCALE




CLUSTERS OF 3 — CLUSTERS OF 5

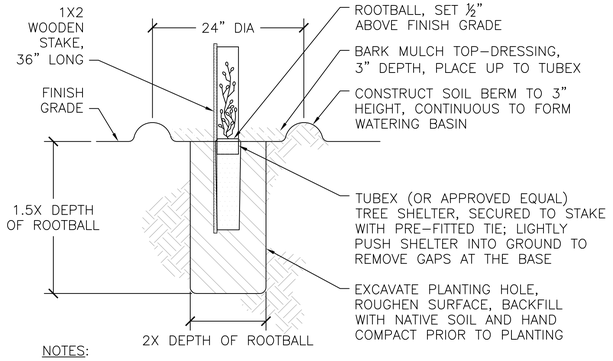
NOTES:
1. PROVIDE WEED FREE ZONE AROUND PLANTING SITE ACCORDING TO THE SPECIFICATIONS.
2. APPLY BARK MULCH TOP–DRESSING TO ALL BASINS, 3" DEPTH, KEEP 3" FROM ROOTCROWNS.
3. PLANT QUANTITIES AND SPACING VARIES BY SPECIES. REFER TO SHEET P–1 FOR ADDITIONAL INFORMATION.
4. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

3 / D–5 CONTAINER PLANTING IN CLUSTERS
NOT TO SCALE



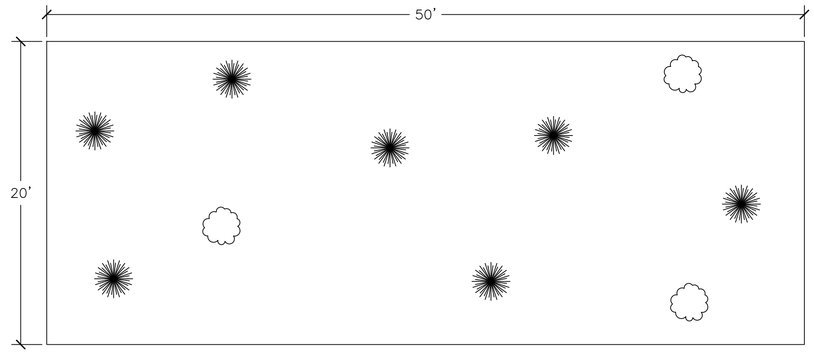

NOTES:
1. THESE TRANSPLANTATION GUIDELINES ARE DERIVED FROM THE CONSERVATION GUIDELINES FOR THE VALLEY ELDERBERRY LONGHORN BEETLE, DATED JULY 9, 1999, BY THE UNITED STATES FISH AND WILDLIFE SERVICE.
2. A QUALIFIED BIOLOGIST MUST BE ON–SITE AT ALL TIMES DURING TRANSPLANTATION PROCEDURE TO HELP ENSURE THAT THERE IS NO UNAUTHORIZED TAKE OF VELB.
3. ALL ELDERBERRY TRANSPLANTATIONS SHALL OCCUR BETWEEN NOVEMBER AND MID–FEBRUARY, OR WHEN THE PLANTS ARE DORMANT.
4. EACH PLANT TO BE TRANSPLANTED SHOULD BE CUT BACK 3 TO 6 FEET FROM THE GROUND OR 50% OF IT'S HEIGHT WHICH EVER IS TALLER. THE TRUNK AND ALL STEMS MEASURING ONE INCH OR GREATER IN DIAMETER AT GROUND LEVEL SHOULD BE REPLANTED.
5. EACH PLANT SHOULD BE EXCAVATED USING A TREE SPADE, BACKHOE, OR OTHER SUITABLE HEAVY EQUIPMENT, REMOVING AS MUCH OF THE ROOTBALL AS POSSIBLE. ONCE EXCAVATED, THE ROOTBALL SHOULD BE IMMEDIATELY SECURED WITH WIRE AND WRAPPED WITH WET BURLAP. THE BURLAP SHALL BE KEPT WET DURING THE ENTIRE TRANSPLANTATION PROCEDURE.
6. THE TRANSPLANT SITE SHOULD BE HEAVILY PRE–IRRIGATED PRIOR TO INSTALLATION OF THE TRANSPLANT TO ENSURE ADEQUATE SOIL MOISTER PRIOR TO PLANTING.
7. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

6 / D–5 ELDERBERRY TRANSPLANT
NOT TO SCALE




NOTES:
1. PROVIDE WEED FREE ZONE AROUND PLANTING SITE ACCORDING TO THE SPECIFICATIONS.
2. FOR PLANTING ON SLOPES, SET PROTECTION SHELTER AND STAKE VERTICAL.
3. REFER TO SPECIFICATIONS AND PLAN SHEETS FOR ADDITIONAL INFORMATION.

4 / D–5 TREE POT 4 WITH TUBEX TREE SHELTER
NOT TO SCALE




SPECIES X, 10 FEET AVERAGE O.C. SPACING, 30% OF PALETTE

SPECIES Y, 10 FEET AVERAGE O.C. SPACING, 70% OF PALETTE

NOTES:
1. PLANT LAYOUT SHALL BE RANDOM AND SHALL NOT BE IN LINEAR ROWS.
2. ALL PLANT LOCATIONS SHALL BE FLAGGED AND APPROVED BY THE ENGINEER PRIOR TO PLANTING.

7 / D–5 GENERIC RANDOM PLANT LAYOUT
NOT TO SCALE

# PLANTING DETAILS
## D-5

LAST REVISION 00–00–00
Details.dwg, Thu, 23 Feb 2012 - 10:18am, 19446

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

CU 00000 | EA 000000