Widening and Railing Replacements at Three Bridges

In rural Tulare County on State Route 201
at Sand Creek Bridge and the Friant-Kern Canal Bridge,
and on State Route 216 at Kaweah River Bridge

06-TUL-201-PM 12.48, PM 21.21, and 06-TUL-216-PM 18.68
Project I.D. 06-1200-0157 EA 06-0H200

SCH No. 2014021064

Initial Study
with Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

April 2015

General Information About This Document

What's in this document:

Throughout this document, a vertical line in the margin indicates a content change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated.

This document contains a Mitigated Negative Declaration, which examines the environmental effects of a project on State Routes 201 and 216 in Tulare County, California.

The Initial Study with Proposed Mitigated Negative Declaration was circulated to the public from February 27 to March 28, 2014. Responses to comments on the circulated document are shown in Appendix J of this document. No one requested a public hearing.

What happens after this:

The proposed project has completed environmental compliance under the California Environmental Quality Act after the publication of this document and filing of the Notice of Determination with the Office of Planning and Research, State Clearinghouse. Once funding is approved, the California Department of Transportation can design and construct the project.

This document can be accessed electronically at the following website:
http://www.dot.ca.gov/dist6/environmental/envdocs/d6/

Printing this document: To save paper, this document has been set up for two-sided printing (to print the front and back of a page). Blank pages occur where needed throughout the document to maintain proper layout of the chapters and appendices.

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Michelle Ray, Senior Environmental Planner, Division of Environmental Analysis, California Department of Transportation, 855 M Street, Suite 200, Fresno, CA 93721; phone (559) 445-5286 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice), or 711.

SCH 2014021064
06-TUL-201 PM 12.48 and PM 21.21, and 06-TUL-216 PM 18.68 EA
06-0H200
06-1200-0157

The project would widen the bridge and replace the railings of Sand Creek Bridge (No. 46-0137) at post mile 12.48 on State Route 201, the Friant-Kern Canal Bridge (No. 46-0065) at post mile 21.21 on State Route 201, and Kaweah River Bridge (No. 46-0091) at post mile 18.68 on State Route 216 in rural Tulare County

INITIAL STUDY
with Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

04/14/15
Date of Approval

Michelle Ray
Senior Environmental Planner
California Department of Transportation
District 6
CEQA Lead Agency

The following person may be contacted for additional information concerning this document:

Michelle Ray, Senior Environmental Planner, Division of Environmental Analysis,
California Department of Transportation, 855 M Street, Suite 200, Fresno, CA 93721
Phone: (559) 445-5286 Email: michelle.ray@dot.ca.gov

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) will widen three existing bridges in rural Tulare County on State Routes 201 and 216 and replace the bridge railings. The Sand Creek Bridge (No. 46-0137) is located on State Route 201 at post mile 12.48 and the Friant-Kern Canal Bridge (No. 46-0065) is at post mile 21.21. The Kaweah River Bridge (No. 46-0091) is located on State Route 216 at post mile 18.68.

Determination

Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on: land use, land use plans, wild and scenic rivers, parks and recreational facilities, growth, community character and cohesion, visual resources, traffic and transportation and bicycle facilities, geology, soils, seismic topography, paleontological resources, air quality, noise and vibration, and wetlands, plant species, and invasive species.

In addition, the proposed project would have no significant effect on: hydrology and floodplain, utilities/emergency services, farmland, water quality and storm water runoff, hazardous waste or materials, and animal species.

In addition, the proposed project would have no significantly adverse effect on biological resources and cultural resources because the following mitigation measures would reduce potential effects to insignificance:

- In-lieu fee payments will be made to the National Fish and Wildlife Foundation In-Lieu Fee program to compensate for permanent impacts to U.S. Army Corps of Engineers' jurisdictional Waters of the U.S.
- Impacts to Waters of the U.S. that are jurisdictional to the U.S. Army Corps of Engineers will be mitigated by payment into an In-Lieu Fee program.
- Removal of riparian trees will be compensated for by replacement planting at a 3:1 ratio for anything less than 24 inches diameter at breast height, and at a 10:1 ratio for anything greater than or equal to 24 inches diameter at breast height.
- Avoidance and minimization measures will be implemented to reduce the potential for adverse effects to the San Joaquin kit fox.
- An archaeological resource in the project area will be avoided and protected during construction. Native American monitors and archaeological monitors will be present during construction activities at the site.
- A Caltrans architectural historian will monitor construction activities at the Friant-Kern Canal Bridge.

Michelle Ray
Senior Environmental Planner
California Department of Transportation
District 6
CEQA Lead Agency

04/14/15
Date

Summary

The California Department of Transportation (Caltrans) will widen three existing bridges in rural Tulare County on State Routes 201 and 216 and replace the bridge railings. On State Route 201, the Sand Creek Bridge (No. 46-0137) at post mile 12.48 and the Friant-Kern Canal Bridge (No. 46-0065) at post mile 21.21 would be widened. On State Route 216, the Kaweah River Bridge (No. 46-0091) at post mile 18.68 would be widened.

All three bridges will be widened to 12-foot-wide lanes and 8-foot-wide shoulders. The bridge abutments will be widened to support the wider bridge. Additional right-of-way will be required at the Sand Creek and Kaweah River locations. Relocation of utilities will be needed at each location. The project will involve work within Sand Creek, the Friant-Kern Canal, and the Kaweah River. Construction is planned to begin in the fall of 2017 and be completed in the late winter of 2018 to early winter of 2019.

A summary of potential impacts at each of the three bridge locations is listed in Table S.1 on the next page.

Table S.1 Summary of Potential Impacts

Potential Impact	Sand Creek Bridge	Friant-Kern Canal Bridge	Kaweah River Bridge	No-Build Alternative
Farmlands	3.12 total acres of farmland would be converted by the project. 1.2 acres are Prime and Unique Farmland. 2.46 acres are under Williamson Act contract.			No farmland would be converted
Utilities/Emergency Services	Relocation of up to 7 PG&E electrical poles	Relocation of 2 PG&E electrical poles and temporary relocation of Stone Corral Irrigation District pipe from bridge	No relocation of utilities	No relocation of utility poles
Cultural Resources	n/a	Widening of bridge, new railing, addition of piers into the Friant-Kern Canal	Small potential for accidental disturbance of archaeological site during construction	No alteration of the existing bridges would occur
Water Quality and Storm Water Runoff	Disturbed soil area of 1.17 acres; net new impervious surface area 0.92 acres	Disturbed soil area of 0.33 acres; net new impervious surface area 0.22 acres	Disturbed soil area of 1.12 acres; net new impervious surface area 0.55 acres	No change to existing drainage
Hazardous Waste/Materials	Asbestos-containing material present below bridge rail	Peeling and flaking lead-based paint on bridge rails, and also on irrigation pipe	No hazardous wastes/materials are present in this bridge	No alteration of existing bridges
Natural Communities	n/a	n/a	Removal of 6 cottonwoods and 2 large willow trees	No tree removal
Wetlands and Other Waters	Temporary impacts to Waters of the U.S.: 0.12 acres. Permanent impacts: 0.00043 acres from 6 new 24-inch diameter bridge piers	Temporary impacts to Waters of the U.S.: 0.44 acres. Permanent impacts: 0.00037 acres from 4 new 24-inch square bridge piers	Temporary impacts to Waters of the U.S.: 0.70 acres. Permanent impacts: 0.0018 acres from 5 new 2-foot x 8-foot bridge piers	No Waters of the U.S. would be affected
Animal Species	Potential to affect bats, migratory birds, and burrowing owls	Potential to affect bats, migratory birds including swallows, and burrowing owls	Potential to affect bats and migratory birds including swallows	No change from existing conditions
Threatened and Endangered Species	San Joaquin kit fox: permanent impacts to 1.42 acres of low-quality foraging habitat	n/a	San Joaquin kit fox: permanent impacts to 3.20 acres of low-quality foraging habitat	No change to existing habitat

Table of Contents

Summary v
Table of Contents vii
List of Figures viii
List of Tables viii
List of Abbreviated Terms ix
Chapter 1 Proposed Project 1
1.1 Introduction 1
1.2 Purpose and Need 1
1.3 Project Description 2
1.4 No-Build Alternative 5
1.5 Identification of a Preferred Alternative 5
1.6 Permits and Approvals Needed 8
Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures 13
2.1 Human Environment 15
2.1.1 Farmland 15
2.1.2 Utilities/Emergency Services 16
2.1.3 Cultural Resources 18
2.2 Physical Environment 24
2.2.1 Water Quality and Storm Water Runoff 24
2.2.2 Hydrology and Floodplain 34
2.2.3 Hazardous Waste or Materials 36
2.3 Biological Environment 39
2.3.1 Natural Communities 39
2.3.2 Wetlands and Other Waters 41
2.3.3 Animal Species 45
2.3.4 Threatened and Endangered Species 49
2.4 Climate Change 56
Chapter 3 Comments and Coordination 71
Chapter 4 List of Preparers 75
Appendix A California Environmental Quality Act Checklist 77
Appendix B Title VI Policy Statement 87
Appendix C Minimization and/or Mitigation Summary 89
Appendix D Farmland Impact Rating and Farmland Maps 99
Appendix E Floodplain Maps 103
Appendix F Federal, State and California Native Plant Society Species Lists 107
Appendix G Species Observed in the Biological Study Areas 117
Appendix H Federal Endangered Species Act Determinations 123
Appendix I State Office of Historic Preservation Concurrence Letters 131
Appendix J Response to Comments 135
Appendix K U.S. Fish and Wildlife Service Concurrence Letters 141
Appendix L Preliminary Project Maps 151
Technical Studies that are Bound Separately 157

List of Figures

Figure 1-1 Project Vicinity Map 6
Figure 1-2 Project Location Map 7
Figure 1-3 Sand Creek Bridge 9
Figure 1-4 Friant-Kern Canal Bridge 10
Figure 1-5 Kaweah River Bridge 11
Figure 2-1 California Greenhouse Gas Forecast 61
Figure 2-2 Mobility Pyramid 64

List of Tables

Table S.1 Summary of Potential Impacts vi
Table 1.1 Permits and Approvals 8
Table 2.1 Climate Change/CO_2 Reduction Strategies 66

List of Abbreviated Terms

Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
PM	post mile

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to widen three existing bridges in rural Tulare County and replace their railings. Sand Creek Bridge (No. 46-0137) is on State Route 201 (Avenue 400) at post mile 12.48 at County Road 116, approximately 1.8 miles southwest of the town of Cutler. The Friant-Kern Canal Bridge (No. 46-0065) is also located on State Route 201 (Avenue 384) at post mile 21.21, about 4 miles east of the community of Seville. The Kaweah River Bridge (No. 46-0091) is located on State Route 216 (Lomitas Drive) at post mile 18.68, about half a mile northwest of the community of Lemon Cove. See Figure 1-1 Project Vicinity Map and Figure 1-2 Project Location Map.

The cost for construction at the three bridges is now estimated to total $8,500,000. Right-of-way and utility relocation costs are now estimated at $449,573.

The project is currently programmed in the 2014 State Highway Operations and Protection Program. The project is proposed to be funded from the District Major Capital Outlay Fund, Bridge Rail Replacement/Upgrade Program in the 2015/2016 fiscal year. Construction is planned to begin fall of 2017 and be completed in the late winter of 2018 to early winter of 2019.

The draft environmental document circulated from February 27 to March 28, 2014, and one comment was received (see Appendix J). Caltrans has identified a preferred alternative and has made the final determination of the project's effect on the environment. No adverse impacts that cannot be mitigated for were identified, therefore Caltrans has prepared a Mitigated Negative Declaration for the project.

1.2 Purpose and Need

The purpose of the project is to upgrade two bridges on State Route 201 and one bridge on State Route 216 to current Caltrans design standards for railings and lane and shoulder widths.

Sand Creek Bridge, which was built in 1939, was identified as deficient in the Caltrans Structure Replacement and Improvement Needs Report. This bridge has two paved 11-foot-wide lanes with 2-foot-wide shoulders, which do not meet the current standard width for highway lanes (12 feet) and for paved shoulders (8 feet). The

existing railing consists of two 3½” x 3½”x ¼” structural tubes attached to steel H-beam posts; the overall rail height is 2 feet 3 inches. This type of railing does not meet current bridge railing standards, nor does it meet minimum height requirements for bicycle and pedestrian use. The bridge approaches lack guardrails. Road 116 joins State Route 201 at a T intersection immediately adjacent to the southeast corner of the bridge.

The Friant-Kern Canal Bridge, constructed in 1948, was also identified as deficient in the Caltrans Structure Replacement and Improvement Needs Report. This bridge has a curb-to-curb width of 26 feet, with two paved 11-foot-wide lanes with 2-foot-wide shoulders, which do not meet the current standard width for highway lanes (12 feet) and for paved shoulders (8 feet). The existing railing is made of wood timber rails and posts. This type of railing does not meet current bridge railing standards, nor does it meet minimum height requirements for bicycle and pedestrian use of the bridge. There are no guardrails on the bridge approaches.

The existing Kaweah River Bridge was built in 1954. It, too, was identified as deficient in the Caltrans Structure Replacement and Improvement Needs Report. This bridge has two 12-foot-wide lanes, but there are no shoulders. The existing metal beam bridge rail consists of steel posts bolted to the outside edge of the bridge deck. This type of railing does not meet current bridge railing standards, nor does it meet minimum height requirements for bicycle and pedestrian use of the bridge.

1.3 Project Description

Caltrans will widen three existing bridges in rural Tulare County and replace the bridge railings: Sand Creek Bridge (No. 46-0137) at post mile 12.48 and the Friant-Kern Canal Bridge (No. 46-0065) at post mile 21.21 on State Route 201, and Kaweah River Bridge (No. 46-0091) at post mile 18.68 on State Route 216.

All three bridges will be widened to provide current design standard 12-foot-wide lanes and 8-foot-wide shoulders. The bridge abutments will be widened to support the wider bridge. A total of 5.14 acres of additional right-of-way will be acquired from seven parcels. In addition, one temporary construction easement of 0.37 acres will be acquired at the Friant-Kern Canal. Utility relocation is necessary at each location. The project will involve work within Sand Creek, the Friant-Kern Canal, and Kaweah River. The three project location areas with preliminary mapping are shown in Appendix L.

The improvements include the following:

Sand Creek Bridge (No. 46-0137)

- The existing bridge railings will be removed and replaced with standard bridge railing Type ST-20S steel bridge rail with tubular galvanized rails. The metal railings will be treated to create a dark brown rustic appearance.
- The bridge structure will be widened by 6 feet 5 inches on either side to become 44 feet wide.
- Six new 24-inch-diameter bridge piers will be added, one on each side of the existing three bents.
- The roadway approaching the bridge will be widened on both sides, tapering from the wider bridge to the existing roadway.
- Metal beam guardrails will be installed at the bridge approaches.
- Existing pavement on the bridge will be removed and replaced.
- The intersection of Road 116 with State Route 201 will be moved 50 feet to the east.
- A new driveway access easement will be provided to the property on the west side of Road 116 from the realigned section of roadway.
- 1.94 acres of new right-of-way will be acquired from two parcels.
- The new Road 116 alignment will be purchased by Caltrans and then transferred to Tulare County.
- An equipment staging area is proposed just south of the bridge near the existing Road 116 alignment.

Friant-Kern Canal Bridge (No. 46-0065)

- The existing bridge railings will be removed and replaced with standard Type 80 concrete rails.
- The bridge structure will be widened by 6 feet 5 inches on either side to become 44 feet wide.
- Four new bridge piers approximately 24 inches square will be added, one on each side of the existing two bents.
- The roadway approaching the bridge will be widened on both sides, tapering from the wider bridge to the existing roadway.

- The access roads along both sides of the Friant-Kern Canal will be realigned slightly.
- Metal beam guardrails will be installed at the bridge approaches.
- Existing pavement on the bridge will be removed and replaced.
- A temporary construction easement of 0.37 acres will extend parallel to the bridge on its south side and to the west on Bureau of Reclamation property.
- An equipment staging area is proposed at an existing pullout just northwest of the bridge.

Kaweah River Bridge (No. 46-0091)

- The existing bridge railings will be removed and replaced with standard bridge railing Type ST-20S steel bridge rail with tubular galvanized rails. The new galvanized railings will be treated to create a dark brown rustic appearance.
- The bridge will be widened to the north by 12 feet 2 inches to become 44 feet wide.
- Five new bridge piers approximately 24 inches wide by 96 inches long will be added, one to each of the existing 5 bents on the north side of the bridge.
- The roadway will be widened by approximately 12 feet on the north side of the highway west of the bridge, tapering to meet the existing roadway to the west.
- The intersection of Dry Creek Drive with State Route 216 will be moved over slightly to be north and west of the existing bridge location.
- 3.20 acres of new right-of-way will be acquired from five parcels to accommodate the widening.
- The existing metal beam guardrails at the bridge approaches will be removed.
- The concrete surface of the completed bridge deck will be overlain with polyester/concrete.
- A temporary access road will be constructed just north of the highway near the northeast corner of the bridge within Caltrans' right-of-way for construction equipment to access the riverbed.
- An equipment staging area is proposed within Caltrans' right-of-way at an existing pullout west of the bridge on the south side of the highway.

1.4 No-Build Alternative

If the Sand Creek Bridge, the Friant-Kern Canal Bridge, and the Kaweah River bridges do not receive the safety upgrades proposed by this project, the existing condition of these bridges will not improve. These bridges will continue to have narrow lanes with little or no shoulders, bridge approaches that lack guardrails, and railings that do not meet current safety standards including minimum height requirements for bicycle and pedestrian use of the bridge.

1.5 Identification of a Preferred Alternative

Caltrans has selected the Build Alternative as the preferred alternative because it meets the purpose and need for the project: to upgrade the three bridges to current Caltrans design standards for railings and lane and shoulder widths.

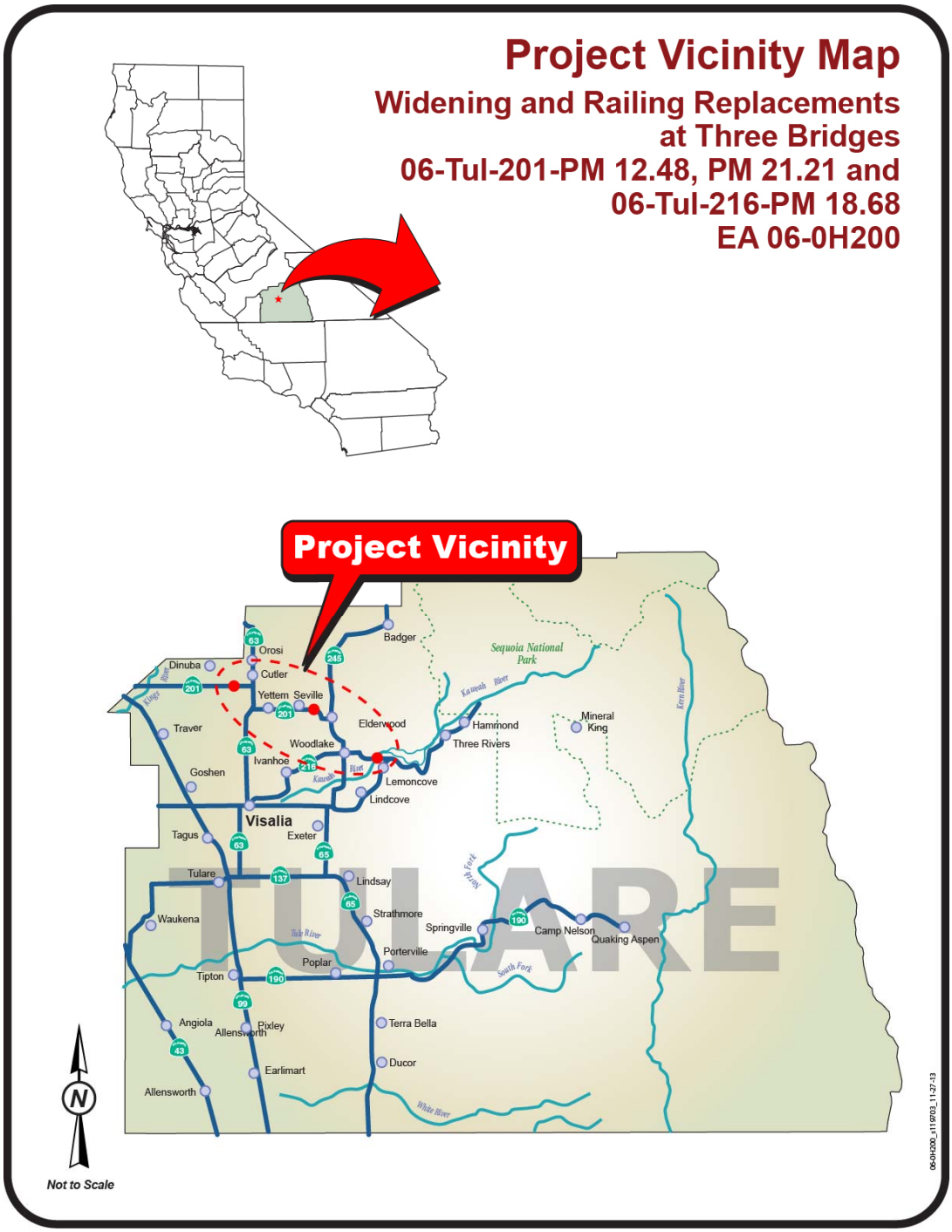


Figure 1-1 Project Vicinity Map

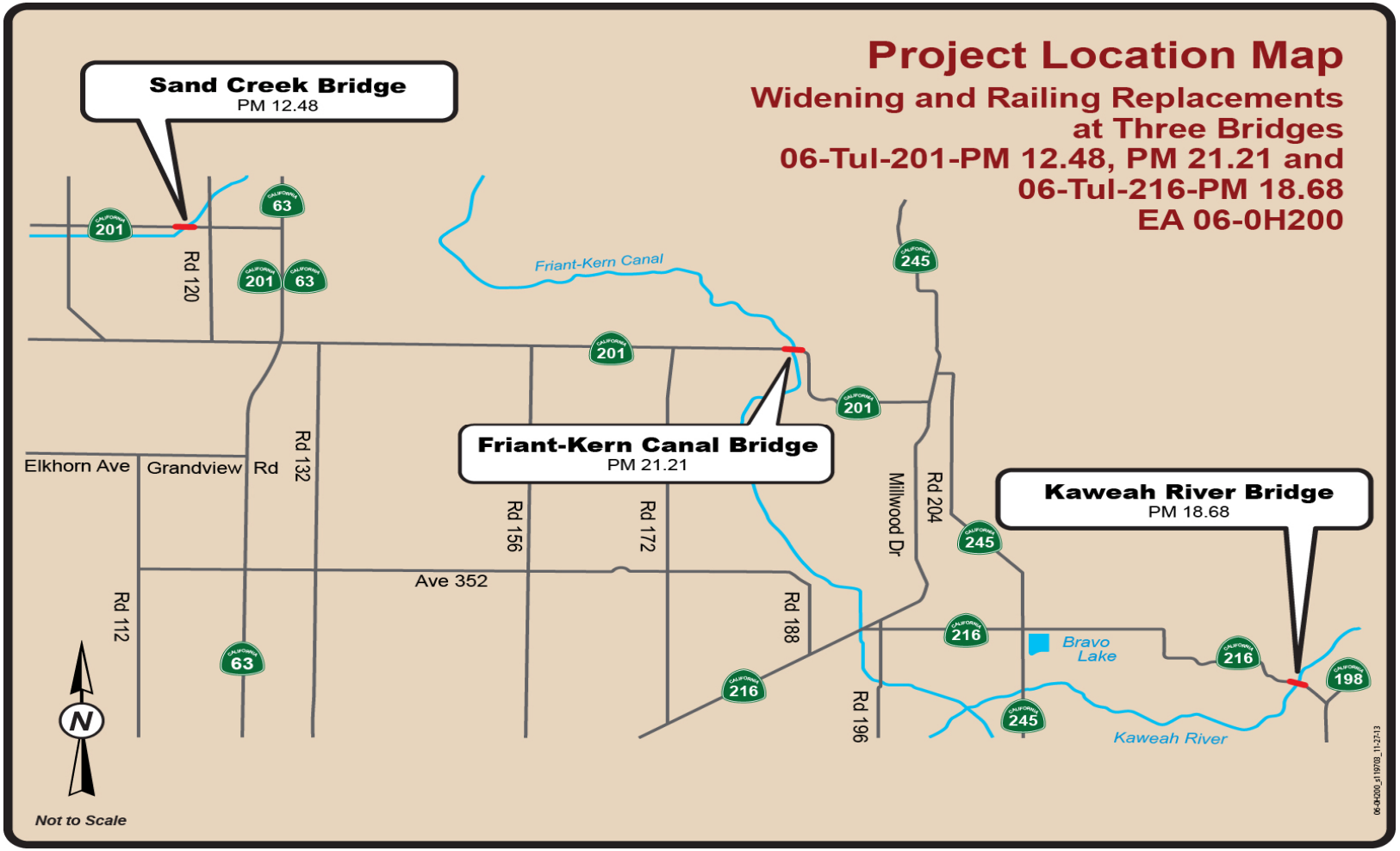


Figure 1-2 Project Location Map

1.6 Permits and Approvals Needed

Individual permits will be needed for construction at each location because each bridge crosses a different waterway.

Table 1.1 Permits and Approvals

Agency	Permit/Approval	Sand Creek Bridge	Friant-Kern Canal Bridge	Kaweah River Bridge	Status
U.S. Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species:				In an Informal Consultation letter dated August 20, 2014 the U.S Fish and Wildlife Service stated that the valley elderberry longhorn beetle is not present in our project area. The U.S Fish and Wildlife Service concurred with Caltrans' determination that the project may affect, [but is] not likely to adversely affect the San Joaquin kit fox. On February 18, 2015 the U.S. Fish and Wildlife Service responded to Caltrans stating that the proposed expanded project footprint at the Kaweah River does not change their concurrence with Caltrans' finding.
	Valley elderberry longhorn beetle	No	No	No	
	San Joaquin kit fox	Yes	No	Yes	
U.S. Army Corps of Engineers	Section 404 Permit for permanent and temporary impacts to Waters of the U.S.	Yes	Yes	Yes	Applications for Section 404 permits will be submitted during the Project Specifications & Estimates (PS&E) Phase of the project.
U.S. Bureau of Reclamation	Application for transportation facility on federal land	No	Yes	No	Application submitted May 20, 2014.
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Yes	Yes	Yes	Applications for Section 1602 permits will be submitted during the Project Specifications & Estimates (PS&E) Phase of the project.
Central Valley Regional Water Quality Control Board	Section 401 Certification for a Water Discharge Permit	Yes	Yes	Yes	Applications for Section 401 permits will be submitted during the Project Specifications & Estimates (PS&E) Phase of the project.
Central Valley Regional Water Quality Control Board	Section 402 National Pollutant Discharge Elimination System	Yes	Yes	Yes	Applications for Section 402 permits will be submitted during the Project Specifications & Estimates (PS&E) Phase of the project.
Central Valley Flood Protection Board	Encroachment permit for work in the riverbed	Yes	No	Yes	Applications for these permits will be submitted during the Project Specifications & Estimates (PS&E) Phase of the project.
Friant Water Authority	Approval and coordination of dewatering for work in canal	No	Yes	No	Applications for Section 402 permits will be submitted during the Project Specifications & Estimates (PS&E) Phase of the project.
San Joaquin Valley Air Pollution Control District	National Emission Standards for Hazardous Air Pollutants Notification	Yes	No	No	Notification will be made 10 days prior to construction activities.

Figure 1-3 Sand Creek Bridge

Figure 1-4 Friant-Kern Canal Bridge

Figure 1-5 Kaweah River Bridge

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As part of the scoping and environmental analysis for the project, the following environmental issues were considered, but no adverse impacts were identified. Consequently, there is no further discussion of these issues in this document.

- Land Use—The project does not conflict with any applicable land use plan, policy or regulation (Tulare County General Plan 2030 Update, Land Use Element, August 2012).
- Consistency with Plans—The project is consistent with the Tulare County General Plan, 2030 Update (August 2012).
- Wild and Scenic Rivers—Kaweah River is not listed as a national wild and scenic river at http://www.rivers.gov. The California Wild and Scenic Rivers Act does not include Kaweah River (Public Resources Code Section 5093.50 et seq.).
- Parks and Recreational Facilities—No parks or recreational facilities are located near or within the proposed project locations (Field Visit, February 5, 2013).
- Growth—The project will not cause or induce growth. Although the existing bridges would be widened, no lanes will be added, therefore the capacity of the roadway will not increase.
- Community Character and Cohesion—The three project locations are in rural farming areas with a widely scattered population. No local communities were identified next to the bridges that would be affected by the project, which would simply widen the existing lanes and shoulders (Field Visit, February 5, 2013)
- Relocations and Real Property Acquisition—No relocations of homes or businesses are anticipated to construct the project. At the Sand Creek location, 1.94 acres would be acquired along Road 116 and the highway west of the bridge; Caltrans would transfer the realigned Road 116 segment to Tulare County after completion of the project. At the Kaweah River location along State Route 216, 3.20 acres of land would be acquired from 5 landowners (2.06 acres of the 3.20 acres has already been dedicated to Caltrans for future use).

- Traffic and Transportation/Pedestrian and Bicycle Facilities—State Routes 201 and 216 would remain open during construction. Temporary traffic signals would control a single lane, whose direction would reverse traffic flow every 3-5 minutes, 24 hours a day during the construction period. Highways at each bridge location are in rural areas where no sidewalks or bicycle lanes exist. No bicycle facilities are planned for these locations (Tulare County Regional Bicycle Transportation Plan, 2010).
- Visual/Aesthetics—The widening of the three bridges and replacement of the bridge rails would have minimal impacts to the visual environment. The project would not adversely affect any designated scenic resource as defined by California Environmental Quality Act statutes or guidelines, or by Caltrans policy. State Routes 201 and 216 at the project locations are neither officially designated nor eligible Scenic Highways (Scenic Resource Evaluation and Visual Impact Assessment, December 2013).
- Geology/Soils/Seismic/Topography—No known faults exist in the project area. The project would not result in substantial soil erosion or landslides. The project is not located on a geologic unit or soil that is unstable or that would become unstable as a result of the project (U.S. Geological Survey Earthquake Hazards Program, February 7, 2013).
- Paleontology—The lateral and vertical excavation at each location is unlikely to encounter significant paleontological resources (Paleontological Identification Report, August 6, 2013).
- Air Quality—Because this project would widen narrow pavement and reconstruct bridges without adding travel lanes, it is exempt from the requirement that an air quality conformity determination be made. Caltrans standard specifications regarding air pollution control and dust control should effectively reduce and control emissions during construction (Air Quality Memo, July 31, 2013). See also Section 2.2.3 Hazardous Waste or Materials below.
- Noise and Vibration—The project will neither increase the existing traffic capacity nor alter the location of the highway, therefore no noise impacts are expected (Air, Noise and Water Scoping Memo October 7, 2011).
- Plant Species—While 11 special-status plant species have the potential to occur in the region, all of the three project sites lack required habitat or are out of the species' elevation range (Natural Environment Study, February 2014).

- Invasive Species—The plant species identified at the project sites that are listed on the California Noxious Weeds List are not subject to state enforcement except to provide for pest cleanliness in nurseries. The landscaping and erosion control included in the project would not introduce species listed as noxious weeds. Equipment arriving at and leaving the project sites should be cleaned to ensure that soil contaminated with invasive weed seeds is not moved in or out of the construction areas (Natural Environment Study, February 2014).

2.1 Human Environment

2.1.1 Farmland

Regulatory Setting

The National Environmental Policy Act (NEPA) and the Farmland Protection Policy Act (FPPA, 7 United States Code [USC] 4201-4209; and its regulations, 7 Code of Federal Regulations [CFR] Part 658) require federal agencies, such as the Federal Highway Administration (FHWA), to coordinate with the Natural Resources Conservation Service (NRCS) if their activities may irreversibly convert farmland (directly or indirectly) to nonagricultural use. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance.

The California Environmental Quality Act (CEQA) requires the review of projects that would convert Williamson Act contract land to non-agricultural uses. The main purposes of the Williamson Act are to preserve agricultural land and to encourage open space preservation and efficient urban growth. The Williamson Act provides incentives to landowners through reduced property taxes to discourage the early conversion of agricultural and open space lands to other uses.

Affected Environment

Construction of this project would require the acquisition of 5.14 acres of land. At the Sand Creek Bridge location, new right-of-way will include acquisition from a citrus orchard on the corner of State Route 201 and Road 116 and the existing eastbound shoulder of State Route 201. At the Kaweah River Bridge location on State Route 216 right-of-way would be acquired from a citrus grove, grazing land, and vacant and disturbed land that is not considered to be agricultural.

Environmental Consequences

A Natural Resources Conservation Service Farmland Conversion Impact Rating form AD-1006 was completed for this project in August 2013. The form was completed again in April 2015 to include the additional right-of-way acquisition needed for the

project that was identified after the draft environmental document was circulated to the public (see Appendix D).

This project would convert a total of 3.12 acres of farmland at two of the three project locations, Sand Creek Bridge and Kaweah River Bridge. This number represents 0.0006 percent of farmland in Tulare County. Of this total acreage, 1.20 acres are classified as Prime and Unique Farmland by the Natural Resources Conservation Service, and 1.92 acres are classified as Statewide or Locally Important Farmland.

The Natural Resources Conservation Service determines the relative value of farmland to be converted by using a formula that weighs farmland classification, soil characteristics, irrigation, acreage, creation of non-farmable land, availability of farm services, and other factors. The Natural Resources Conservation Service determined that the proposed project would convert farmland having a relative value of 55 points out of 100 points possible under these criteria.

An additional 94 points were factored in on the Natural Resources Conservation Service form using other criteria for a total impact rating of 149 points. The Farmland Protection Policy Act requires consideration of impacts if a project's score exceeds 160 points on the Natural Resources Conservation Service Farmland Conversion Impact Rating.

This project would acquire a total of 2.46 acres of right-of-way from three parcels that are covered under Williamson Act contracts, one at Sand Creek Bridge and two at the Kaweah River Bridge project location. However, the amount of right-of-way needed from any single parcel should not result in the cancellation of any Williamson Act contracts.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are proposed. Caltrans will compensate landowners for property acquired for the project.

2.1.2 Utilities/Emergency Services

Affected Environment

Emergency services in unincorporated Tulare County are provided by the Tulare County Fire Department. This includes fire suppression, emergency medical service, emergency rescues, and response to hazardous conditions.

Sand Creek Bridge

PG&E overhead electrical power lines are located within the project area. The Alta Irrigation District uses Sand Creek as part of its irrigation system. The nearest Tulare County Fire Station is the Cutler-Orosi station.

Friant-Kern Canal Bridge

Southern California Edison overhead electrical lines run through the project area. The Stone Corral Irrigation District owns a pipe attached to the south side of the bridge. The Bureau of Reclamation owns the Friant-Kern Canal. This location is between the Cutler-Orosi fire station and the Woodlake fire station.

Kaweah River Bridge

Southern California Edison overhead electrical lines are within the project footprint. AT&T has telephone lines on poles in the area. The Wutchumna Water Company owns property adjacent to the project footprint, including the headgate of the Wutchumna Ditch irrigation canal. A Tulare County fire station is located in Lemon Cove, less than a mile east of this location.

Environmental Consequences

During construction, there will always be one lane open to traffic at the construction sites so emergency vehicles will not have to stop. Therefore, response times would not be noticeably affected.

Sand Creek Bridge

At Sand Creek Bridge up to seven PG&E power poles would need to be relocated.

Friant-Kern Canal Bridge

Two Southern California Edison power poles would need to be relocated due to the bridge and shoulder widening.

The 200 feet of Stone Corral Irrigation District irrigation pipe that is attached to the side of the bridge would need to be temporarily relocated prior to construction.

Kaweah River Bridge

One Southern California Edison electrical line pole and one utility pole shared jointly by Southern California Edison and AT&T would need to be relocated construction.

Avoidance, Minimization, and/or Mitigation Measures

Relocation of PG&E and Southern California Edison electrical poles and the Stone Corral Irrigation District pipe will take place prior to the start of construction.

Caltrans has met with the irrigation district and is working with them to coordinate the timing of relocating their pipe. Following construction this irrigation pipe will be reattached to the wider bridge.

Caltrans will continue to coordinate with the U.S. Bureau of Reclamation and the Friant Water Authority regarding work in the Friant-Kern Canal.

2.1.3 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation [36 Code of Federal Regulations (CFR) 800]. On January 1, 2014, the *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California* went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement (PA) implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The Federal Highway Administration's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 U.S. Code [USC] 327).

The Archaeological Resources Protection Act (ARPA) applies when a project may involve archaeological resources located on federal or tribal land. The ARPA requires

that a permit be obtained before excavation of an archaeological resource on such land can take place.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties.

Historical resources are considered under the California Environmental Quality Act, as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet the National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

Affected Environment

A Historic Property Survey Report was completed for this project in December 2013. This includes a Historical Resource Evaluation Report (October 2013) and an Archaeological Survey Report (December 2013). A Supplemental Historic Property Survey Report was completed in January 2015, which included a Supplemental Archaeological Survey Report (January 2015).

Caltrans Cultural Resources staff reviewed the following historical sources:

- National Register of Historic Places
- California Register of Historical Resources
- California Inventory of Historic Resources
- California Historical Landmarks
- California Points of Historical Interest
- Caltrans Historic Highway Bridge Inventory
- Caltrans District 6 Cultural Resources Database

Caltrans staff also obtained a records search from the Southern San Joaquin Valley Information Center of the California Historical Resources Information System at California State University, Bakersfield.

Architectural Resources

The Friant-Kern Canal was determined eligible for listing on the National Register of Historic Places in 1997, and it is on the California Register of Historic Places. The Bureau of Reclamation as a federal agency and owner of the Friant-Kern Canal is identified as a consulting party for the current undertaking. Caltrans, acting as the federal lead agency, is fulfilling all Section 106 obligations, including the Bureau of Reclamation's permitting actions. The Bureau of Reclamation reviewed and concurred with all Caltrans Section 106 determinations for this undertaking on March 17, 2015.

In addition to the Friant-Kern Canal, four historic-era properties were identified within the area of potential effects of the current project, including the three bridges identified within the project description and a single-family residence adjacent to Sand Creek Bridge. Field surveys for historic architectural resources were conducted by Caltrans Cultural Resources staff on October 16 and October 25, 2013.

Two of the bridges—Sand Creek Bridge (No. 46-0137) and the Kaweah River Bridge (No. 46-0091)—were previously evaluated as part of the 2006 Caltrans Historic Bridge Inventory and identified as "Category 5" bridges or not eligible for the National Register and required no further study. The two remaining properties—the Friant-Kern Canal Bridge (No. 46-0065; identified as a "Category 4" bridge or not evaluated in the 2006 bridge inventory) and one single-family residence—were recorded and formally evaluated under the criteria of the National Register of Historic Places. The single-family residence was determined to be ineligible for inclusion in the National Register of Historic Places and is not a historical resource for the purposes of the California Environmental Quality Act (CEQA).

Friant-Kern Canal Bridge (No. 46-0065)

This bridge was designed and constructed as a component part of the Friant-Kern Canal in 1948 and is an integral part of the historic fabric of the canal. Caltrans has determined that Bridge No. 46-0065 is eligible for the National Register of Historic Places under Criterion A as a character-defining feature and contributing element of the Friant-Kern Canal for purposes of the current undertaking only, and is a historical resource for the purposes of CEQA.

Cultural and Archaeological Resources

On July 28, 2013, Caltrans District 6 Native American Coordinator Mandy Marine initiated consultation with tribal representatives with previous involvement or

previous knowledge of the project areas. Consultation efforts resulted in the participation of local Native American representatives to monitor the archaeological testing that was conducted near one of the project locations in September 2013.

Archaeological surveys were performed by Caltrans Cultural Resources staff on May 16, 2012 and April 26, 2013 within the area of potential effects that was defined for the three project locations. Subsequent archaeological studies were conducted on September 24, 2013. One isolated trash dump (circa 1930's) was discovered northeast of the bridge during the October 2013 geoarchaeological investigation. No prehistoric resources were discovered.

Pedestrian surveys of portions of the expanded project footprint and area of potential effects for the project were conducted on March 21, August 12 and 29, September 26, and December 2, 2014.

Archaeological Resources

In late 2013 and 2014, pedestrian archaeological surveys were conducted at all three project locations. Additionally, a records search was conducted at the California Historical Resources System office on the campus of the California State University, Bakersfield. As a results of these efforts, no archaeological sites were found at two of the three project locations.

At the third location, a previously recorded archaeological site, consisting of four rock features, was determined to be within the Area of Potential Effects for the undertaking. The pedestrian survey and Native American consultation conducted by Caltrans staff for the project resulted in the identification of an additional feature and surface artifacts associated with the same site. Due to the presence of the site and the sensitivity of the location, two geoarchaeological investigations, requiring subsurface exploration, were conducted at the third project location. These efforts determined that the already identified archaeological site had an intact 2300-year-old subsurface stratum. Previously, it was thought that earlier construction of the road and bridge had eliminated the possibility of such a deposit being present.

Environmental Consequences

For an account of Caltrans' consultation with the State Office of Historic Preservation please refer to Chapter 3 Comments and Coordination. Caltrans has determined that a Finding of No Adverse Effects is appropriate for this undertaking. The Finding was submitted to the State Historic Preservation Office on March 18, 2015, and concurrence (with conditions) was received on March 19, 2015.

Friant-Kern Canal and Friant-Kern Canal Bridge (No. 46-0065)

The proposed project, as it is currently designed, will retain the essential qualities that make the resource eligible for the National Register of Historic Places.

Proposed alterations to the Friant-Kern Canal and Friant-Kern Canal Bridge (No. 46-0065) will be completed in a manner consistent with the Secretary of the Interior's Standards for Rehabilitation. The alterations proposed to the bridge will ensure that it retains its historic use as a bridge and as a component of the Friant-Kern Canal. The changes will not inhibit this bridge's ability to convey its historic association with the Friant-Kern Canal or greater Central Valley Project construction. The addition of the four new piers outside of the existing bents, and the replacement of the original railing with Type 80 railing, would not affect the integrity of setting, location, or association and will only minimally affect integrity of workmanship and design. As a result, these changes, by design, will be differentiated from the old but be compatible with the historic materials, features, size, scale, and proportion of Friant-Kern Canal Bridge (No. 46-0065).

Because the Friant-Kern Canal is eligible for the National Register of Historic Places and Caltrans is considering the Friant-Kern Canal Bridge (No. 46-0065) as a contributing element for the purposes of this project, they are both Section 4(f) resources. Caltrans' determination of *de minimis* use of the Friant-Kern Canal and Friant-Kern Canal Bridge (No. 46-0065) is bound with the technical studies for this project.

Archaeological Resources

The archaeological site was determined to be eligible to the National Register of Historic Places, for the purposes of the project, due to its ability to contribute important information about the prehistoric past.

Detailed information on the proposed construction activities indicate that all the features and deposits associated with the known archaeological site could be avoided. To ensure that no alteration of the features and deposits of the archaeological site will occur during construction, Environmental Sensitive Areas (ESAs) will be established to prevent destructive construction activities in those areas. Additionally, Native American and archaeological monitors will be present during construction to make sure that there is no breach of these areas. Due to the protections just noted, it was determined that the archaeological site would not be adversely affected by the construction project.

This site is not a Section 4(f) resource because the assumption of eligibility is based on its informational values and it is not a resource that meets the threshold of significance for preservation in place.

Avoidance, Minimization, and/or Mitigation Measures

All changes to the Friant-Kern Canal Bridge (No. 46-0065) and the Friant-Kern Canal banks and bed would be completed in a manner consistent with the Secretary of the Interior Standards for Rehabilitation of Historic Properties, including the replacement of the original bridge railing with Type 80 concrete railing. A Caltrans architectural historian will monitor construction activities at this bridge.

An ESA Action Plan has been prepared for the project. The identified surface features of the archaeological site and the buried deposit will be protected during construction. Native American monitors will be present during all ground-disturbing activities, and a Caltrans archaeologist will monitor the area during construction activities.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will cease until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to California Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission, which will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact the District 6 Cultural Resources Branch so that staff may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of California Public Resources Code 5097.98 are to be followed as applicable.

2.2 Physical Environment

2.2.1 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[1] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act. Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the National Pollutant Discharge Elimination System permit scheme. The following are important Clean Water Act sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers.

[1] A point source is any discrete conveyance such as a pipe or a man-made ditch.

The goal of the Clean Water Act is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects.

The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent[2] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative

[2] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the Clean Water Act definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable Regional Water Quality Control Board Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (National Pollutant Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide

application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program—Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water."

The State Water Resources Control Board has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all department rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);

2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Statewide Storm Water Management Plan assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Statewide Storm Water Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of Best Management Practices. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest Statewide Storm Water Management Plan to address storm water runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ, as amended by 2010-0014-DWG), adopted on November 16, 2010, became effective on February 14, 2011. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan

(SWPPP). In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than 1 acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the U.S. Army Corps of Engineers issues a 404 permit.

In some cases, the Regional Water Quality Control Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Quality Control Board may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

A Water Quality Assessment was completed for this project in December 2013, and updated in September 2014. The report was prepared by reviewing existing topographic data from the U.S. Geological Survey, erosion and climate data from the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (WSS), and hydrology and surface streams information from the Federal Emergency Management Agency (FEMA) *Flood Insurance Study* (FIS) and *Flood Insurance Rate Map* (FIRM).

Surface Water

Sand Creek

Sand Creek is located in the South Valley Floor/Alta Hydraulic Unit-551.60. The creek flows southwesterly to the Tulare Lake Bed. However, the channel is dry most of the time and does not support any riparian vegetation within the project area. The intermittent flow of water through the channel, managed by the Alta Irrigation District, is used to irrigate adjacent agricultural fields.

Friant-Kern Canal

Water flowing in the Friant-Kern Canal is from Millerton Lake, and the San Joaquin River is the ultimate source. Water is diverted to the southern part of the San Joaquin Valley through the Friant-Kern Canal. The Friant Water Authority distributes water from the canal to the irrigation districts; the irrigation districts in turn provide water to farms in eastern Fresno, Tulare, and Kern counties.

Kaweah River

This river is within the South Valley Floor/Kaweah Delta Hydraulic Unit 558.10. The Kaweah River flows west-southwest through the project site toward Visalia. Lake Kaweah, formed by the construction of Terminus Dam, is just over 1 mile upstream (northeast) from the project site. Historically, the river ended in the Tulare Lake Basin but, because so much water is diverted from the river for agriculture, the channels west of Visalia now are usually dry.

The Clean Water Act requires states to identify water bodies that are considered impaired, which means that the water body does not meet water quality standards. The Kaweah River is a 303(d) listed water body for pH and unknown toxicity.

Groundwater

The three project locations, at Sand Creek, the Friant-Kern Canal, and the Kaweah River are located within the San Joaquin Valley Groundwater Basin and the Kaweah Groundwater Subbasin 5-22.11, which drains to the Pacific Ocean via San Francisco Bay. The primary water-bearing units in the basin are surface alluvial deposits and the underlying Tulare Formation.

Groundwater generally follows the structural surface of the underlying bedrock in the western portion of the project site and flows toward the valley floor to the west. Groundwater near the valley floor flows generally northeast toward the delta and the San Joaquin River. Regionally, groundwater occurs in fractured basement rocks, and locally in shallow alluvial aquifers.

The Tulare Formation, composed of water-bearing sands and gravels of moderate permeability, is separated into upper and lower zones by the Corcoran Clay. Locally, groundwater is of moderate to good quality. There are localized areas of high hardness, iron, nitrate, and chloride in this subbasin.

Environmental Consequences

Construction of the proposed project has the potential to contribute pollutants to receiving water bodies. These pollutants include sediment and silt associated with soil disturbance because of construction activities, and chemical pollutants associated with the construction materials that are brought onto the project site.

The operation and maintenance of the bridges and highways have the potential to affect water quality in the long term. Potential pollutant sources associated with the operation of the proposed project include motor vehicles, highway maintenance, illegal dumping, and spills.

Potential short-term impacts to water quality were analyzed by determining the amount of disturbed soil area for the project. Potential long-term impacts to water quality were analyzed by determining the proposed additional impervious surface area (hard surfaces, such as paving) for the project. Impacts to surface and groundwater quality from the discharge of highway runoff were analyzed by comparing water quality objectives (total maximum daily loads) with average storm water runoff concentration from Caltrans highways.

Sand Creek Bridge

The disturbed soil area at this location will be 1.17 acres. The net new impervious surface area due to widening of the bridge, bridge approaches, and work at Road 116 will be 0.92 acres.

The widened bridge will maintain existing drainage patterns because rainwater will still flow off of the bridge into the creek. However, the impact to Sand Creek are expected to be minimal due to the relatively small increase in impervious surface area of the bridge.

Friant-Kern Canal Bridge

The disturbed soil area at this site would be 0.33 acres, and the net new impervious surface area created by widening the bridge, its approaches, and work at the canal access roads would be 0.22 acres.

The widened bridge will maintain existing drainage patterns because rainwater will still flow off of the bridge into the canal. However, the impacts to water in the Friant-Kern Canal are expected to be minimal due to the relatively small increase in impervious surface area of the bridge.

Kaweah River Bridge

The disturbed soil area at the Kaweah River Bridge will be 1.12 acres. The net new impervious surface area at this location is estimated to be 0.55 acres.

The proposed widening of the bridge will maintain existing drainage patterns; rainwater will still flow off of the bridge into the river. However, the impacts to water in the Kaweah River are expected to be minimal due to the relatively small increase in impervious surface area of the bridge.

The project will have less than significant impacts to water quality with the following avoidance, minimization, and proposed mitigation measures incorporated.

Avoidance, Minimization, and/or Mitigation Measures

The total disturbed soil area for the project will be 2.62 acres. Because the disturbed soil area will be more than 1 acre at Sand Creek Bridge and the Kaweah River Bridge a Stormwater Pollution Prevention Plan would be required for each location under Caltrans Statewide Permit.

Since the disturbed soil area would be less than 1 acre at the Friant-Kern Canal location, the contractor will be required to prepare a Water Pollution Control Program prior to construction and to implement it during construction. Compliance with the Water Pollution Control Program should adequately address protecting surface water quality from pollution.

The following avoidance and minimization measures are recommended to minimize short-term construction and long-term operational water quality impacts associated with implementation of the project:

- The project activities shall conform to the requirements of the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity (Final Order No. 2012-011-DWQ, NPDES No. CAS000003), and any subsequent General Permit in effect at the time of project construction.
  This permit authorizes storm water and authorized non-storm water discharges from Caltrans construction properties, facilities, and activities and would be required prior to starting the construction phase of the project. As part of this permit requirement, a Water Pollution Control Program shall be prepared at the Friant-Kern Canal in accordance with Caltrans 2010 Standard Specification

Section 13.1-Water Pollution Control prior to construction consistent with the requirements of the Central Valley Regional Water Quality Control Board. The Water Pollution Control Program will incorporate all applicable best management practices to ensure that adequate measures are taken during construction to minimize water quality impacts. For the Sand Creek and at the Kaweah River locations a Storm Water Pollution Prevention Plan shall be prepared which would outline the specific water pollution controls required for the project to maintain compliance with the Construction General Permit.

- The project will require dewatering in the Friant-Kern Canal and the Kaweah River during construction. The dewatering activities need to conform to the requirements of the General Waste Discharge Requirements/National Pollutant Discharge Elimination System (NPDES) Permit for Dewatering and Other Low Threat Discharges to Surface Waters (Order No. R5-2008-0081/NPDES Permit No. CAG995001). A Notice of Intent shall be submitted to the Central Valley Regional Water Quality Control Board for approval before dewatering may commence. A completed Notice of Termination Form shall be submitted to the Central Valley Regional Water Quality Control Board after the permitted discharge is complete.
- Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Section 21-Erosion Control of the Caltrans Standard Specifications and the special provisions included in the contract for the project.
- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and shall be maintained until permanent erosion control structures are in place.
- Suitable best management practices, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.
- All disturbed areas would be restored to pre-construction contours.

- Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):
  - A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.
  - Equipment and hazardous materials shall be stored a minimum of 50 feet away from surface water features.
  - Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 feet away from surface water features or within an adequate fueling containment area.

2.2.2 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A. To comply, the following must be analyzed:

- Practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The base floodplain is defined as "the area subject to flooding by the flood or tide having a 1 percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

Affected Environment

A Location Hydraulic Study was completed for this project in January 2014.

Federal Emergency Management Agency Flood Insurance Rate Maps were reviewed to determine the area subject to the above-described floodplain criteria.

Sand Creek Bridge

Based on Flood Insurance Rate Map Number 06107C0340E in Tulare County, dated June 16, 2009, the segment of Sand Creek within the project area is within Zone A. Zone A is a special flood hazard area where base elevations are not determined, and it is subject to flooding by the 1 percent annual chance flood (100-year flood) also known as the base flood (see Appendix E, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps).

The existing bridge is a transverse encroachment on the floodplain, that is, the bridge piers cross the river bed perpendicular to the direction of the water flow.

Friant-Kern Canal Bridge

Based on Flood Insurance Rate Map Numbers 06107C0660E in Tulare County, dated June 16, 2009, work on the bridge approach west of the bridge would be within Zone A. The Friant-Kern Canal and the bridge itself are not within the floodplain (see Appendix E, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps).

Kaweah River Bridge

Based on Flood Insurance Rate Map Numbers 06107C0695E in Tulare County, dated June 16, 2009, the work planned at the Kaweah River is within Zone A (see Appendix E, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps).

The existing bridge is a transverse encroachment on the floodplain, that is, the bridge piers cross the river bed perpendicular to the direction of the water flow.

Environmental Consequences

Sand Creek Bridge

Installation of additional bridge piers would be an encroachment on the floodplain. The widened bridge is not expected to increase the base floodplain elevation. Construction of the project would not cause a significant encroachment on the floodplain.

Friant-Kern Canal Bridge

As noted above, the Friant-Kern Canal is not within the floodplain.

Kaweah River Bridge

Installation of additional bridge piers would be an encroachment on the floodplain. The widened bridge is not expected to increase the base floodplain elevation. Construction of the project would not cause a significant encroachment on the floodplain.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation measures are proposed.

2.2.3 Hazardous Waste or Materials

Regulatory Setting

Hazardous materials, including hazardous substances and wastes are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). The purpose of the CERCLA, often referred to as “Superfund,” is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for “cradle to grave” regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act

- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean up contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is encountered, disturbed during, or generated during project construction.

Affected Environment

A Preliminary Site Investigation was completed for this project in March 2013. A survey was conducted to determine if asbestos-containing materials and/or lead-based paints were present in the bridge structures and to investigate the presence of aerially deposited lead in roadside soil.

Sand Creek Bridge (46-0137)

This bridge, located on State Route 201 at post mile 12.48, was built in 1939. The survey determined the following:

- Five square feet of nonfriable sheet packing material (which contains asbestos) is present on the barrier rail shims.

- No lead-based paint is present on this bridge.
- Non-hazardous levels of aerially deposited lead are present in the soil along the highway.

Friant-Kern Canal Bridge (No. 46-0065)

This bridge, located on State Route 201 at post mile 21.21, was built in 1948. The survey determined the following:

- No asbestos-containing materials were found to be present in the bridge.
- The bridge railing has 400 square feet of peeling and flaking white paint that would be considered to be California and federal hazardous waste.
- The irrigation pipe attached to the southern side of the bridge has 20 square feet of silver paint that would be considered to be California and federal hazardous waste.
- Non-hazardous levels of aerially deposited lead are present in the soil along the highway.

Kaweah River Bridge (No. 46-0091)

This bridge, located on State Route 216 at post mile 21.21, was built in 1953. The survey determined the following:

- No asbestos-containing materials were found by the Preliminary Site Investigation.
- No lead-based paint is present on this bridge.
- Non-hazardous levels of aerially deposited lead are present in the soil along the highway.

Environmental Consequences

With implementation of the minimization measures below, this project would have a less than significant impact from hazardous waste.

Avoidance, Minimization, and/or Mitigation Measures

- Prior to removal of the railings of the Sand Creek Bridge, the contractor is required to notify the San Joaquin Valley Air Pollution Control District to comply with the National Emission Standards for Hazardous Air Pollutants that applies to asbestos-containing materials.

- During construction, the contractor will have to comply with Caltrans Nonstandard Special Specifications Provisions to properly handle and dispose of lead-based paint present on the Friant-Kern Canal Bridge.
- Prior to construction, the contractor will be required to complete a Lead Compliance Plan.

2.3 Biological Environment

2.3.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below under Threatened and Endangered Species, Section 2.3.4. Wetlands and other waters are also discussed below in Section 2.3.2.

Affected Environment

A Natural Environment Study was completed for this project in February 2014.

Sand Creek Bridge

The Sand Creek project location does not include natural communities. The area consists of citrus orchards, a residence, an irrigation channel, and weedy areas along the roadsides and channel. There are no features within or near the project site that would facilitate its use as a wildlife migration corridor.

Friant-Kern Canal Bridge

This project location does not include natural communities. The Friant-Kern Canal bed, banks and roadways are kept free of vegetation. The area surrounding the project location is dominated by citrus orchards, with weeds alongside the irrigation ditches and roads. There are no wildlife migration corridors in the area; the Friant-Kern Canal acts as a movement barrier to terrestrial wildlife.

Kaweah River Bridge

The project location at the Kaweah River Bridge includes valley foothill riparian, riverine, and annual grassland natural communities, and also citrus orchards.

Valley Foothill Riparian - The predominant vegetation community at this project location is the valley foothill riparian community. This community is characterized by cottonwoods (*Populus fremontii*), California sycamore (*Platanus racemosa*) and valley oak *(Quercus lobata)* over an understory of willows (*Salix* spp.), blackberry (*Rubus armeniacus*), elderberry (*Sambucus* spp.), poison oak (*Toxicodendron diversilobum*), and buttonbush (*Cephalanthus occidentalis*). The valley foothill riparian community is very important to at least 50 amphibian and reptile species, 55 species of mammals, and almost 150 bird species because it provides food, water, dispersal corridors, and cover for an abundance of wildlife.

Annual Grassland – Annual grasslands in this area are dominated by naturalized non-native species such as red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum)* and wild oats (*Avena fatua)*, which are typically grazed by livestock. Annual grasslands are an important vegetation type that provides habitat for a diverse variety of reptilian, avian, and mammalian species.

Riverine habitat of the Kaweah River at the project site consists primarily of shallow water that provides habitat for many aquatic plants and animals. Aquatic insect nymphs including mayflies, caddisflies, and dragonflies provide prey for fish, amphibians, and birds. Waterfowl, including the American coot (*Fulica americana*), and mallard duck (*Anas platyrhynchos*), forage in the river. Cattails, willows, and other aquatic plants grow along the edge of the river.

The Kaweah River in the project area could function as a movement corridor for a variety of wildlife because the vegetation provides good cover and the gentle topography makes travel easy. However, wildlife use of this area is expected to be somewhat limited and local in nature due to the high level of human use in the area and the lack of natural habitats downstream on the valley floor.

Environmental Consequences

It is anticipated that six cottonwood trees and two large willows in riparian habitat at the Kaweah River will need to be removed in order to construct at the Kaweah River Bridge.

Avoidance, Minimization, and/or Mitigation Measures

Loss of riparian vegetation (cottonwood trees and willow clumps) will be compensated for by planting replacement trees at a 3:1 ratio for anything less than 24 inches in diameter at breast height and at a 10:1 ratio for trees/bushes with a main stem greater than or equal to 24 inches in diameter at breast height. The replanting will occur in a location appropriate for the reestablishment of riparian habitat similar to that which was lost to the project, as agreed to by the California Department of Fish and Wildlife.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 U.S. Code 1344), is the primary law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the U.S. Environmental Protection Agency.

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the U.S. Army Corps of Engineers' Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with the U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this order states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or Tahoe Regional Planning Agency) may also be involved.

Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required.

The California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for additional details.

Affected Environment

A Natural Environment Study was completed for this project in February 2014.

Jurisdictional waters of the U.S. are defined as those waters that are currently used or were used in the past or may be susceptible to use in interstate commerce, including all waters subject to the ebb and flow of the tide and all interstate waters including interstate wetlands. This definition also includes interstate lakes, rivers, streams, (including intermittent and ephemeral streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds where the use, degradation, or destruction of which could affect interstate or foreign commerce.

Sand Creek

Sand Creek is potentially a jurisdictional water of the U.S. The Sand Creek channel has been heavily modified, relocated, and controlled; it now serves as an irrigation ditch. The channel contains water only according to irrigation needs in the area and does not support aquatic vegetation or habitats.

No jurisdictional wetlands are present at the Sand Creek project location.

Friant-Kern Canal

The Friant-Kern Canal, which is unlined at the project location, is potentially a jurisdictional water of the U.S. This human-constructed feature provides limited fish habitat, but lacks riparian vegetation, woody debris, natural substrates, undercut

banks, or any other characteristics of high-quality aquatic habitat. The smooth, steep canal walls and bed are maintained and cleaned to provide unimpeded water flow, which reduces the habitat suitability of the canal.

There are no jurisdictional wetlands at the Friant-Kern Canal project location.

Kaweah River

The Kaweah River is potentially a jurisdictional water of the U.S. The river provides habitat for fish, amphibians, birds, and mammals, and provides water for irrigation and human recreation.

The Kaweah River project site does not include any jurisdictional wetlands.

Environmental Consequences

Water flows would not be measurably altered or diminished by the installation of the new bridge piers.

Sand Creek

Construction of the project at Sand Creek Bridge would result in 0.12 acres of temporary impacts to Sand Creek. Approximately 0.00043 acres (18.84 square feet) of permanent impacts to the creek would occur resulting from installation of six new 24-inch-diameter bridge piers next to the existing bridge piers.

Friant-Kern Canal

At the Friant-Kern Canal Bridge construction of the project would result in 0.44 acres of temporary impacts to the Friant-Kern Canal. Approximately 0.00037 acres (16 square feet) of permanent impacts to the canal as a waterway would occur resulting from the addition of four new 24-inch-square bridge piers next to the existing bridge piers.

Kaweah River

Widening of the Kaweah River Bridge would result in 0.70 acres of temporary impacts to the Kaweah River. Approximately 0.0018 acres (80 square feet) of permanent impacts would occur resulting from the addition of five new 2-foot by 8-foot bridge piers next to the existing bridge piers.

In addition, riparian vegetation, including willows and cottonwood trees, would need to be removed to allow construction access to the river channel.

Avoidance, Minimization, and/or Mitigation Measures

In-lieu fee payments will be made to the National Fish and Wildlife Foundation In-Lieu Fee program to compensate for permanent impacts to U.S. Army Corps of Engineers' jurisdictional Waters of the U.S.

Best management practices would be included so that the smallest practical footprint would be used to minimize temporary, indirect, and permanent impacts to jurisdictional waters of the U.S. Where possible, in-channel work would be performed when channels are dry or at low-flow conditions. Refueling, maintenance, and staging of vehicles and equipment would not be permitted within the waters of the U.S. channel. Spill control and containment measures would be used to prevent equipment fluids from contaminating waterways and groundwater on the project site. Erosion control measures would be implemented to prevent impacts to water quality due to runoff.

2.3.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.3 below. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or NOAA Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act

- Sections 1600–1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

A Natural Environment Study was completed for this project in February 2014.

Animals seen during biological surveys at Sand Creek included hawks, crows, western fence lizards, and ground squirrels. At the Friant-Kern Canal biological study area, the remains of a great horned owl were found on the roadside; raccoon tracks were also seen. Animals or signs of animals seen at the Kaweah River Bridge location included fence lizards, raccoon, opossum, deer, red-winged blackbirds, ducks, hawks, and other migratory birds. See Appendix G Species Observed in the Biological Study Areas.

Signs of cliff swallows were found on all three bridges. Bats may roost underneath the Friant-Kern Canal Bridge. Signs of bat night roosting are clear at the Kaweah River Bridge. The hoary bat could potentially roost in the orange trees at the Sand Creek Bridge and in trees by the Kaweah River Bridge.

Burrowing Owl

The burrowing owl *(Athene cunicularia)* is a California species of concern and is protected under the Migratory Bird Treaty Act. The burrowing owl has long legs, barred under parts, spotted upper sides, a white throat, and a broad, arched eyebrow.

The burrowing owl is a yearlong resident in open, dry grassland and desert habitats and in pinyon-juniper and ponderosa pine habitats. These owls eat mostly insects, but will also eat small mammals, reptiles, birds, and carrion. They use rodent burrows or other burrows for roosting and nesting. The burrowing owl usually nests in old burrows of ground squirrels or other small mammals, but will occasionally dig its own burrow in soft soil. Breeding occurs from March through August, peaking in April and May. The female owl lays 2-10 eggs.

Biological surveys during the spring of 2013 noted potentially suitable burrows (probably excavated by California ground squirrels) on the Sand Creek project site, but no sign of burrowing owl presence. It is unlikely that burrowing owls would choose to live here because a house is next to this project location. No burrowing owl sign was seen at the Friant-Kern Canal site, but the nearby large drainage ditch banks and hilly terrain east of the bridge may provide suitable habitat. The closest recorded

burrowing owl occurrences are 5.3 miles south of the Sand Creek site (dated 1990) and 5.4 miles west of the Friant-Kern Canal site (dated 2006).

Environmental Consequences

Compliance with the Migratory Bird Treaty Act can be achieved by removing trees and shrubs outside of the nesting season. The nesting season is defined as February 15 to September 1. Alternately, trees and brush may be removed during the nesting season only after having been surveyed by a qualified biologist and declared that no nesting is taking place.

The project may include the temporary exclusion of swallows from nesting and bats from roosting under the bridges during construction.

Trees that could provide potential roosting habitat for the hoary bat would be removed prior to construction at the Sand Creek Bridge location and at the Kaweah River Bridge.

Burrowing Owl

Before construction, there is the potential that a burrowing owl could occupy a burrow next to the project impact area at Sand Creek or the Friant-Kern Canal. If construction activities occur during the burrowing owl breeding season, noise may directly affect breeding activities of neighboring owls. The project is not expected to result in the temporary or permanent loss of any burrowing owl foraging or burrowing habitat.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans Standard Special Provision 14-6.03 protects nesting birds by establishing a no-work buffer zone until young birds have fledged.

The contractor would be responsible for installing and maintaining exclusionary devices under the bridge prior to February 15 of the first year of construction to prevent swallows from nesting on the structure during construction. A Caltrans Non-Standard Special Provision would be included in the construction contract to allow removal of swallow nests or the use of devices to exclude swallows between September 1 and February 14.

A pre-construction bat survey should be performed prior to the removal of roost tree habitat at the Sand Creek Bridge location and by the Kaweah River Bridge. Any removal of roosting habitat (trees) should be performed in the winter months after the

bats have migrated south for the winter. Pre-construction surveys will be required to confirm the presence or absence of bats on the Friant-Kern Canal Bridge.

The project may include the temporary exclusion of bats from a night roost located on the underside of the Kaweah River Bridge during construction. The contractor would be responsible for installing and maintaining exclusionary devices under the bridge prior to construction. The same device used for swallow exclusion may also be used for bats.

Burrowing Owl

With implementation of the avoidance and minimization measures listed below, no impacts are expected to the burrowing owl. Therefore, no compensatory mitigation is proposed for potential impacts to burrowing owl habitat.

- Preconstruction surveys prior to ground disturbance would be conducted to search for burrowing owls within and adjacent to the project impact area at the Sand Creek and Friant-Kern Canal locations.
- No disturbance should occur within 160 feet of burrows occupied by burrowing owls during the non-breeding season (September 1 through February 31) or within 250 feet during the breeding season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Wildlife verifies that either: (1) the birds have not begun egg laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- If burrowing owls are observed prior to construction, mitigation guidelines would include passive relocation and installation of exclusionary devices.
- Burrowing owls, if found on a project site, would be excluded from the project impact area and within a 160-foot buffer zone with the installation of one-way doors in burrow entrances. One-way doors would be left in place for 48 hours to ensure that owls have left the burrows before excavation. The project area would then be monitored daily for the next week to confirm owl use of alternate burrows before excavating burrows in the project impact area.
- Whenever possible, hand tools would be used to excavate burrows and burrows would be refilled once excavated to avoid reoccupation.
- One alternative natural or artificial burrow would be provided for each burrow that would be excavated in the project impact area. The relocated burrow must be

located in an area with a minimum of 6.5 acres of suitable foraging habitat adjacent to or connected to the relocated burrow, for each pair of burrowing owls relocated.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species.

The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of the Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

The California Department of Fish and Wildlife is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise

lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Affected Environment

A Natural Environment Study was completed for this project in February 2014.

On March 21, 2014, a Biological Assessment was completed and submitted to the U.S. Fish and Wildlife Service, initiating formal consultation for valley elderberry longhorn beetle and San Joaquin kit fox. On August 20, 2014, the U.S. Fish and Wildlife Service concurred with Caltrans' determination that its action to construct this project may affect, but is not likely to adversely affect the federally-listed as endangered San Joaquin kit fox.

On October 16, 2014 Caltrans wrote a letter to the U.S. Fish and Wildlife Service in regard to changes in the project footprint that will result in additional permanent impacts to potential habitat. Caltrans determined that these changes were not likely to change the original determination for the San Joaquin kit fox and requested concurrence for this conclusion. On February 18, 2015 the U.S. Fish and Wildlife Service responded to Caltrans's letter, stating that the proposed expanded project footprint at the Kaweah River does not change their conclusion as stated in the August 20, 2014 Letter of Concurrence: the proposed project may affect, but is not likely to adversely affect the San Joaquin kit fox. See Appendix K U.S. Fish and Wildlife Service Concurrence Letters.

Species lists for the project areas were obtained from the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife and the California Native Plant Society on November 20, 2013. Updated species lists were obtained in March 2015 (see Appendix F). Caltrans' Federal Endangered Species Act determinations are shown in Appendix H. No critical habitat occurs within or near any of the three project locations. The waterways involved in the three project sites do not include any Essential Fish Habitat or involve federal fisheries concerns.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is federally listed as a threatened species. The current distribution of the valley elderberry longhorn beetle is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield. This beetle is completely dependent on its host plant, the blue elderberry (*Sambucus nigra ssp. caerulea*), a common component of riparian forests of the Central Valley and adjacent foothills.

Valley elderberry longhorn beetles emerge from inside the wood of elderberry shrubs in the spring as the flowers begin to open. The exit holes are distinctive small oval openings and are often the only clue that the beetles occur in an area. The adult beetles eat the elderberry leaves until about June when they mate. The females lay eggs in crevices of the elderberry bark. As soon as they hatch, the larvae begin to burrow into the tree where they will spend 1-2 years eating the interior wood, which is their sole food source.

Surveys for the valley elderberry longhorn beetle host plant, blue elderberry, were conducted on April 3, 2013 at all three project locations. No elderberries were found at either the Sand Creek or Friant-Kern Canal site. An additional survey was conducted on December 2, 2013 at the Kaweah River project site to cover a wider area that would be affected by construction. A total of 32 elderberry bushes were recorded; all except one of these are on the east side of the Kaweah River. Valley elderberry longhorn beetle exit holes were located on dead branches of several bushes on the site. No exit holes were found on living branches. The presence of a current valley elderberry longhorn beetle population on the site was assumed. Twenty-one (21) of these elderberry bushes were determined to be in areas of potential impact from the project.

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is federally listed as endangered and state listed as threatened. The San Joaquin kit fox is the smallest canid species in North America. These foxes average 31 inches long and about 12 inches tall at their shoulders. They have a small slim body, relatively long ears set close together, narrow nose and a long busy tail tapering slightly toward the black-tipped tail. They typically carry their tail low and straight. Coat color varies from buff, tan, grizzled or yellow-grey.

The San Joaquin kit fox is found in the southern half of the state in annual grassland or grassy open stages of vegetation dominated by scattered shrubs and brush. It is primarily carnivorous, feeding on desert cottontails, rodents, insects, reptiles, birds, bird eggs, and vegetation. Kit foxes dig their own dens in open level areas with loose-textured soils supporting scattered, shrubby vegetation. They are active all year long, and are mostly nocturnal, but occasionally can be seen during the daytime in cool weather. Litters averaging 4 pups are born from February to April.

No sign of the San Joaquin kit fox was seen during biological surveys at any of the three project sites. Orange orchards may provide low-quality foraging habitat for the San Joaquin kit fox in the absence of better habitat. The grassland habitat at the Kaweah River site may provide suitable denning and foraging habitat. The closest recorded San Joaquin kit fox sightings are 3.6 miles south of the Sand Creek site, 7 miles southeast of the Friant-Kern Canal site, and 4.9 miles northwest of the Kaweah River site. All of these sightings are more than 23 years old. While there is potential that the San Joaquin kit fox could occur in the area of the three project sites, the poor quality of the habitat and lack of recent sightings indicate that the presence of this species is unlikely.

Environmental Consequences

Valley Elderberry Longhorn Beetle

The project could affect up to 21 elderberry bushes along State Route 216 at the Kaweah River Bridge location. Caltrans submitted a Biological Assessment to the U.S. Fish and Wildlife Service on March 21, 2014 which proposed mitigation for impacts to the beetle. A Letter of Concurrence was issued to Caltrans by the U.S. Fish and Wildlife Service on August 20, 2014. The letter stated that the U.S. Fish and Wildlife Service has determined that, based on the best available data, the valley elderberry longhorn beetle is not present in the project area.

San Joaquin Kit Fox

The project would result in permanent impacts to 1.42 acres of orange orchard, which is considered to be low-quality San Joaquin kit fox foraging habitat, at the Sand Creek project site and 0.60 acres at the Kaweah River project site. In addition, 2.60 acres of ruderal grassland and bare highway shoulders at the Kaweah River Bridge location will be affected by the project. No habitat impacts are expected at the Friant-Kern Canal. The total permanent impacts to San Joaquin kit fox foraging habitat will be 4.62 acres.

The U.S. Fish and Wildlife Service concurred with Caltrans' determination that the proposed project may affect, but is not likely to adversely affect, the San Joaquin kit fox.

Avoidance, Minimization, and/or Mitigation Measures

Valley Elderberry Longhorn Beetle

No avoidance, minimization, or mitigation measures are required as stated in the concurrence received from the U.S. Fish and Wildlife Service. It has determined that the threatened species is not present in the project area.

San Joaquin Kit Fox

No compensatory mitigation for impacts to low-quality foraging habitat is required, as stated in the concurrence letter received from the U.S. Fish and Wildlife Service. The following avoidance and minimization measures will be implemented by the project:

- Preconstruction/pre-activity surveys would be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox.
- If natal/pupping dens are discovered within the project area or within 200 feet of the project boundary, the U.S. Fish and Wildlife Service would be immediately notified.
- The configuration of exclusion zones around San Joaquin kit fox dens should have a 50-foot radius around potential dens and a 100-foot radius around known dens. In instances where the 50 and 100 foot exclusion zones cannot be maintained, the dens will be monitored. Once these dens are verified to be unoccupied, they will be temporarily blocked via sandbagging or the installation of a one-way door, for the duration of the project.
- Disturbance to all San Joaquin kit fox dens would be avoided to the maximum extent possible.
- A qualified biologist would be present at the construction site during initial ground-disturbing activities. To the extent possible, a biologist would be available on-call during all construction periods when not present on-site.

- All food-related trash items will be disposed of in closed containers and removed daily from the entire project site in order to reduce the potential for attracting predator species.
- The U.S. Fish and Wildlife Service Standard Measures for Protection of the San Joaquin Kit Fox for Prior to or During Ground Disturbance, Construction and On-Going Operational Requirements, which follow, would also be implemented:
- Project vehicles should observe a 20-miles per hour speed limit in all project areas, except on county roads and State and Federal highways. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.
- All excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Thoroughly inspect holes and trenches for trapped animals before filling. If at any time a trapped or injured kit fox is discovered, the procedures described under the final bullet in this list must be followed.
- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.
- No firearms shall be allowed on the project site.
- No pets should be permitted on the project site.
- Use of rodenticides and herbicides in project areas should be restricted. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

- A representative shall be appointed by Caltrans who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the U.S. Fish and Wildlife Service.

- An employee education program should be conducted for any project that has expected impacts to kit fox or other endangered species.

- Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re- contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.

- Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured or entrapped kit fox. The California Department of Fish and Wildlife contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

- The Sacramento Fish and Wildlife Office and California Department of Fish and Wildlife will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The U.S. Fish and Wildlife Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The California Department of Fish and Wildlife contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.

2.4 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of greenhouse gases generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of greenhouse gas emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of greenhouse gas-emitting sources. The dominant greenhouse gas emitted is carbon dioxide, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "greenhouse gas mitigation" and "adaptation." "Greenhouse gas mitigation" is a term for reducing greenhouse gas emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)[3].

There are four primary strategies for reducing greenhouse gas emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower greenhouse gas-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively.[4]

---

[3] http://climatechange.transportation.org/ghg_mitigation/
[4] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

Regulatory Setting

This section outlines state and federal efforts to comprehensively reduce greenhouse gas emissions from transportation sources.

State

With the passage of several pieces of legislation including State Senate and Assembly bills and executive orders, California launched an innovative and proactive approach to dealing with greenhouse gas emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this order is to reduce California's greenhouse gas emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall greenhouse gas emissions reduction goals as outlined in Executive Order S-3-05, while further mandating that the Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research to develop recommended amendments to the California Environmental Quality Act Guidelines for addressing greenhouse gas emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land use, and housing policies to plan for the achievement of the emissions target for its region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the state's long-range transportation plan to meet California's climate change goals under AB 32.

Federal

Although climate change and greenhouse gas reduction are a concern at the federal level, currently no regulations or legislation have been enacted specifically addressing greenhouse gas emissions reductions and climate change at the project level. Neither the U.S. Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis.[5] The Federal Highway Administration supports the approach that climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery.

Addressing climate change mitigation and adaptation up front in the planning process will assist in decision-making and improve efficiency at the program level and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies outlined by the Federal Highway Administration to lessen climate change impacts correlate with efforts that the state is undertaking to deal with transportation and climate change; these strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in travel activity.

[5] To date, no national standards have been established regarding mobile source greenhouse gases, nor has U.S. EPA established any ambient standards, criteria or thresholds for greenhouse gases resulting from mobile sources.

Climate change and its associated effects are also being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and Executive Order 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 (October 5, 2009): This order is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also directs federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

The U.S. Environmental Protection Agency's authority to regulate greenhouse gas emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that greenhouse gases meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the court's ruling, the U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six greenhouse gases constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing act and the Environmental Protection Agency's assessment of the scientific evidence that form the basis for the Environmental Protection Agency's regulatory actions. The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration issued the first of a series of greenhouse gas emission standards for new cars and light-duty vehicles in April 2010.[6]

The U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced greenhouse gas emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever greenhouse gas regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle greenhouse gas regulations.

The final combined standards that made up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards implemented by this program are expected to reduce greenhouse gas emissions by an estimated 960

[6] http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq

million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On August 28, 2012, the U.S. Environmental Protection Agency and National Highway Traffic Safety Administration issued a joint Final Rulemaking to extend the national program for fuel economy standards to model year 2017 through 2025 passenger vehicles. Over the lifetime of the model year 2017-2025 standards, this program is projected to save approximately four billion barrels of oil and two billion metric tons of greenhouse gas emissions.

The complementary U.S. Environmental Protection Agency and National Highway Traffic Safety Administration standards that make up the Heavy-Duty National Program apply to combination tractors (semi-trucks), heavy-duty pickup trucks and vans, and vocational vehicles (including buses and refuse or utility trucks). Together, these standards will cut greenhouse gas emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish greenhouse gas emissions and fuel-efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce carbon dioxide emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014 to 2018 heavy-duty vehicles.

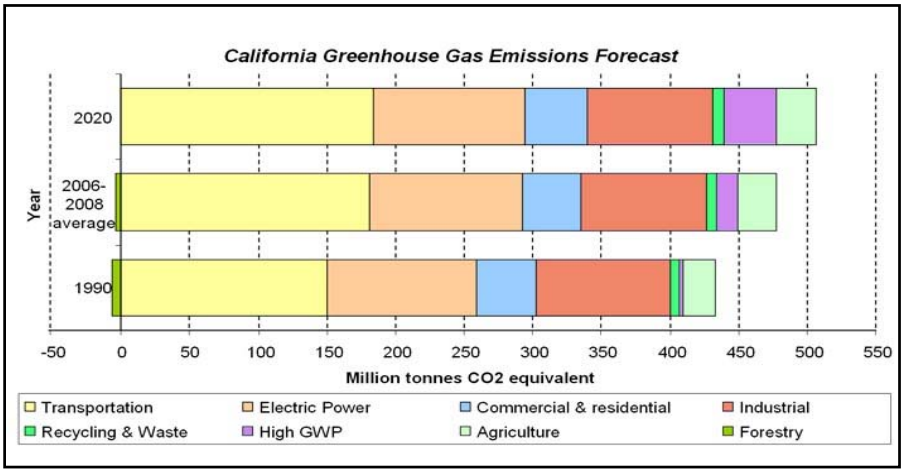
Project Analysis

An individual project does not generate enough greenhouse gas emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of greenhouse gas.[7] In the assessment of cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (California Environmental Quality Act Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

---

[7] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce greenhouse gas emissions. As part of its supporting documentation for the Draft Scoping Plan, the Air Resources Board released the greenhouse gas inventory for California (forecast last updated: October 28, 2010). See Figure 2-1. The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the greenhouse gas inventory for 2006, 2007, and 2008.



Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

Figure 2-1 California Greenhouse Gas Forecast

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing greenhouse gas emission reduction and climate change. Recognizing that 98 percent of California's greenhouse gas emissions are from the burning of fossil fuels and 40 percent of all human-made greenhouse gas emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.[8]

[8] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

This project proposes to widen three existing bridges in rural Tulare County and to replace the bridge railings. The Sand Creek Bridge (No. 46-0137) is on State Route 201 at post mile 12.48, and the Friant-Kern Canal Bridge (No. 46-0065) is at post mile 21.21. The Kaweah River Bridge (No. 46-0091) is on State Route 216 at post mile 18.68. All three bridges would be widened to provide current design standard 12-foot-wide lanes and 8-foot-wide shoulders. Operation of the project would involve the improvement of roadway safety, including new pavement on the Sand Creek and Friant-Kern Canal bridges and new cement surfacing on the Kaweah River Bridge.

Because no new lanes would be constructed, no roadway capacity would be added, so the amount of traffic that travels over these bridges would not be increased by the project. Construction greenhouse gas emissions are unavoidable, but the proposed project would not increase or change long-term traffic volumes. Therefore, the project is not expected to cause an overall increase in operational greenhouse gas emissions if it is built, compared to if the project is not constructed. There will also likely be long-term greenhouse gas benefits by improved operation and smoother pavement surfaces due to new surfacing planned for the bridge.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction greenhouse gas emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Construction activity may generate a temporary increase in mobile source air toxics emissions. The use of diesel retrofit technologies outlined in the Congestion Mitigation and Air Quality Improvement Program provisions (technologies that are designed to lessen a number of mobile source air toxics) would help lower short-term mobile source air toxics. Compliance with the San Joaquin Valley Unified Air Pollution Control District rules and regulations during construction would reduce construction-related air quality impacts.

Construction mitigation includes strategies that reduce engine activity or reduce emissions per unit of operating time. Operational agreements that reduce or redirect work or shift times to avoid community exposures would have positive benefits when sites are near vulnerable populations. The use of technological adjustments to equipment, such as off-road dump trucks and bulldozers, would also be appropriate strategies. These technological fixes could include particulate matter traps, oxidation catalysts, and other devices that provide an after-treatment of exhaust emissions. The use of clean fuels, such as ultra-low sulfur diesel, also would be a very cost-beneficial strategy. The Environmental Protection Agency has listed a number of approved diesel retrofit technologies; many of these can be deployed as emissions mitigation measures for equipment used in construction.

During construction, the project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors could cause occasional annoyance and complaints. The project would be subject to a dust control permit from the San Joaquin Valley Unified Air Pollution Control District. Caltrans Standard Specifications pertaining to dust control and dust palliative requirements is a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 14-9.02—Air Pollution Control and Section 14-9.03—Dust Control, require the contractor to comply with the San Joaquin Valley Air Pollution Control District rules, ordinances, and regulations.

CEQA Conclusion

While the proposed project will result in construction-related greenhouse gas emissions during construction, it is anticipated that the project will not result in any increase in operational greenhouse gas emissions. While it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and California Environmental Quality Act significance, it is too speculative to make a significance determination regarding the project’s direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

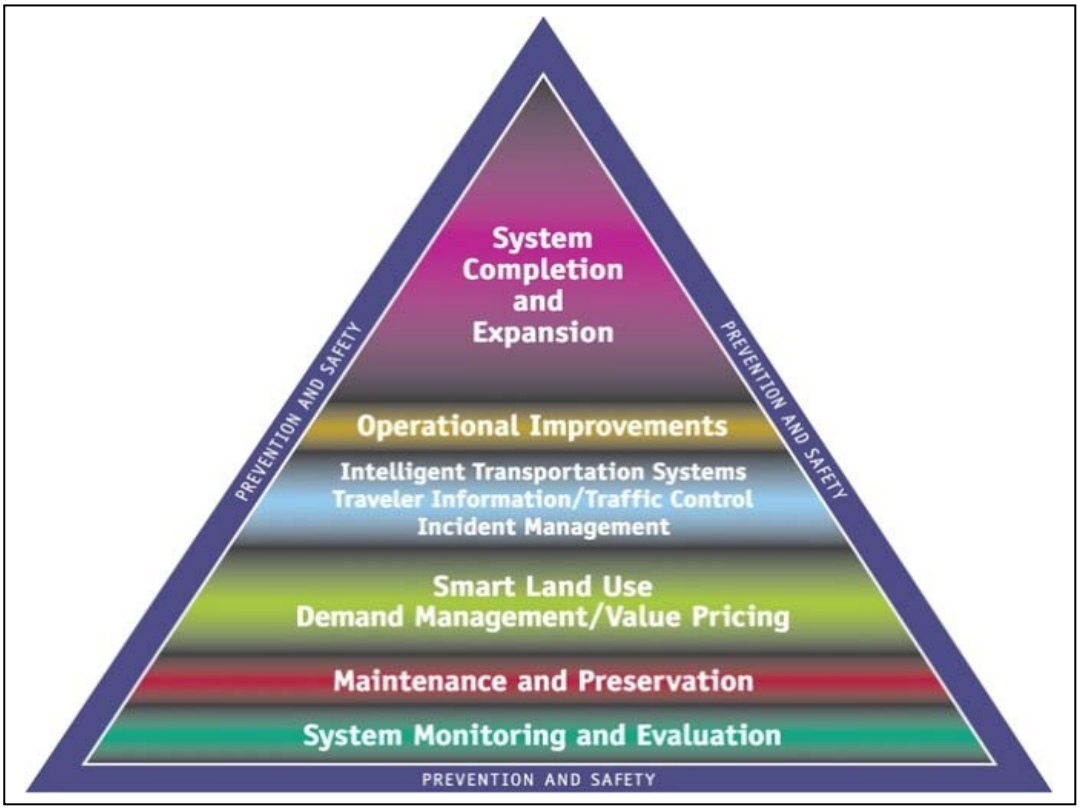


Figure 2-2 Mobility Pyramid

Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor's Climate Action Team as the Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic congestion below 2008 levels and a corresponding reduction in greenhouse gas emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain carbon dioxide reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown above in Figure 2-2 Mobility Pyramid.

Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans also

works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light- and heavy-duty trucks; the department is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. Environmental Protection Agency and Air Resources Board.

Caltrans is also working toward enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill 375 (Steinberg 2008), Senate Bill 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. The California Transportation Plan defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the California Transportation Plan is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the California Transportation Plan 2040 will identify the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs.

Table 2.3 summarizes the departmental and statewide efforts that Caltrans is implementing to reduce greenhouse gas emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 2.1 Climate Change/CO_2 Reduction Strategies

Strategy	Program	Partnership		Method/Process	Estimated CO_2 Savings Million Metric Tons (MMT)	
		Lead	Agency		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	0.0045	0.0065 0.045 0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 0.36	4.2 3.6
Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs		Goods Movement Action Plan	Not Estimated	Not Estimated
Total					2.72	18.18

The Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities.

Caltrans Activities to Address Climate Change (April 2013)[9] provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measure will also be included in the project to reduce the greenhouse gas emissions and potential climate change impacts from the project:

1. According to the Caltrans Standard Specifications, the contractor must comply with all local Air Pollution Control District's rules, ordinances, and regulations for air quality restrictions. During construction of the proposed project contractors would be required to follow mitigation for construction vehicle idling as recommended by the San Joaquin Valley Air Pollution Control District's 2002 California Environmental Quality Act Guidelines. The San Joaquin Valley Air Pollution Control District recommends minimizing heavy duty construction equipment idling to less than 10 minutes.

Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality, the Office of Science and Technology Policy, and the National Oceanic and Atmospheric Administration

[9] http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

(NOAA), released its interagency task force progress report on October 28, 2011[10], outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks.

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed Executive Order S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This order set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop *The California Climate Adaptation Strategy* (Dec 2009)[11], which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to Executive Order S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Transportation Agency (formerly Business, Transportation and Housing); Health and Human Services; and the Department of Agriculture. The document is broken down

---

[10] http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation

[11] http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF

into strategies for different sectors that include public health; biodiversity and habitat; ocean and coastal resources; water management; agriculture; forestry; and transportation and energy infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report[12] to recommend how California should plan for future sea level rise. The report was released in June 2012 and included the following:

- Relative sea level rise projections for California, Oregon and Washington, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.
- Range of uncertainty in selected sea level rise projections.
- Synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- Discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by the Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the state's infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academy's study.

All state agencies that are planning to build projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of Executive Order S-13-08 and/or are programmed for construction funding from 2008 through 2013, or

---

[12] *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at http://www.nap.edu/catalog.php?record_id=13389

are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone, and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Transportation Agency (formerly Business, Transportation, and Housing Agency) to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans is assessing which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, Caltrans has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, Caltrans will be able to review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is an active participant in the efforts being conducted in response to Executive Order S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings.

This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

Cultural Resources: Native American Heritage Commission

- The Native American Heritage Commission was consulted to conduct a search of its files to determine if any sacred sites or traditional cultural properties were known to exist within or near the project areas. The Native American Heritage Commission responded that the search result was negative and provided a list of recommended Native American contacts.

Cultural Resources: State Office of Historic Preservation

- A Historic Property Survey Report including a supporting technical studies was submitted to to the State Office of Historic Preservation in December 2013.

- A letter was received by Caltrans from the State Historic Preservation Officer concurring with Caltrans' determination that one residence evaluated for the project is not eligible for the National Register of Historic Places. The State Historic Preservation Officer also concurred with Caltrans considering Friant-Kern Canal Bridge (46-0065) eligible for the National Register of Historic Places for the purposes of this undertaking only.

- A Supplemental Historic Property Survey Report including a supporting technical study was submitted to to the State Office of Historic Preservation on January 15, 2015.

- The State Historic Preservation Officer responded in a letter to Caltrans on February 25, 2015 that she did not concur with Caltrans' determination that one archaeological site is eligible for the National Register of Historic Places based on the information provided. However, the State Historic Preservation Officer

suggested that Caltrans assume that the site is eligible for the National Register of Historic Places for the purposes of this project only in lieu of preparation of a formal evaluation and Memorandum of Agreement for the site (see Appendix I).

- Caltrans submitted the Finding of Effect to the State Office of Historic Preservation on March 18, 2015.
- The State Historic Preservation Officer concurred with the Finding of Effect on March 19, 2015.

Biology: California Department of Fish and Wildlife

- On December 11, 2013, Ronald Cummings contacted Laura Peterson-Diaz of the California Department of Fish and Wildlife, Fresno Office to inquire if the agency would require a 1602 Streambed Alteration Permit for the Friant-Kern Canal.
- On January 2, 2014, Ronald Cummings contacted Laura Peterson-Diaz to follow up on the December 11 call. Ms. Peterson-Diaz stated that while the question of requiring a 1600 permit for the Friant-Kern Canal site had not yet been decided, it was likely that the California Department of Fish and Wildlife would want to take jurisdiction.
- On January 2, 2014, Ms. Peterson-Diaz sent an email to Ronald Cummings stating the Friant-Kern Canal site would be considered under the 1600 permit jurisdiction, but may or may not require a Streambed Alteration Agreement depending on if there were any resources that would be affected.

Biology: U.S. Fish and Wildlife Service

- On February 6, 2014 Ronald Cummings contacted Jennifer Schofield of the U.S. Fish and Wildlife Service Sacramento office and inquired about the foraging habitat suitability of orange orchards for the San Joaquin kit fox. Ms. Schofield responded in an e-mail that same day and stated that there is research to show that the kit fox does make some use of orchards for travel and foraging but due to the marginal suitability of such habitat, the agency would not require formal consultation or compensation for its loss. She stated that a determination of “may affect, not likely to adversely affect” would be appropriate for impacts to orange orchards within the range of the San Joaquin kit fox.
- May 8, 2014: Jen Schofield sent an email to Ron Cummings with questions regarding project details for the U.S. Fish and Wildlife Service review of the

Biological Assessment. These questions were answered by Ron Cummings in an email on June 4, 2014.

- May 30, 2014: Jen Schofield sent an email asking about the status of a response to her email of May 8. She also stated that, for this project, Caltrans did not need to formally consult for the valley elderberry longhorn beetle. The project would now only be an informal consultation, since the only federally-listed species remaining was the San Joaquin kit fox, with a "not likely to adversely affect" determination.

- July 18, 2014: Jen Schofield sent an email inquiring about the potential of night work being necessary. If night work would be necessary, would Caltrans agree to provide a biological monitor on site? Ron Cummings replied to Ms. Schofield's email on July 21 that night work is not planned

- August 20, 2014: Jen Schofield submitted an electronic copy of the Letter of Concurrence in response to Caltrans' request for concurrence on the Biological Assessment. The U.S Fish and Wildlife Service concurred with the Caltrans determination that its action to construct this project may affect, but is not likely to adversely affect the federally-listed as endangered San Joaquin kit fox.

- October 16, 2014: Caltrans wrote a letter to the U.S. Fish and Wildlife Service explaining proposed changes to the project footprint that would result in additional permanent impacts to San Joaquin kit fox low-quality foraging habitat. Caltrans determined that these changes are not likely to change its original determination for the San Joaquin kit fox and requested concurrence for this conclusion.

- February 18, 2015: the U.S. Fish and Wildlife Service responded to Caltrans's letter, stating that the proposed expanded project footprint at the Kaweah River does not change their conclusion of the August 20, 2014 concurrence letter: the proposed project may affect, but is not likely to adversely affect the San Joaquin kit fox.

Bureau of Reclamation

- April 10, 2014: Caltrans met with the Bureau of Reclamation to discuss the project and how it may affect the Friant-Kern Canal in preparation for submittal of an Application for Transportation and Utility Systems on Federal Lands.

- September 30, 2014: Caltrans met with the Bureau of Reclamation again to discuss the project and to answer any questions that their staff reviewing our permit application had about the project.

Chapter 4 List of Preparers

This document was prepared by the following Caltrans Central Region staff:

Judy Aguilar-Luna, Project Manager. M.S., Criminology – L.E., California State University, Fresno; 12 years of experience in environmental planning and 11 years of experience in Program/Project Management. Contribution: Project Manager.

Sherry Alexander, Landscape Architect. Masters Degree in Landscape Architecture, California State Polytechnic University, Pomona; 8 years of landscape architecture experience and 17 years of planning experience (city, county, and state). Contribution: Visual Impact Assessment and Scenic Resources Evaluation Memo.

Christopher Brewer, Associate Environmental Planner (Architectural History). M.A., Public Administration, California State University, Bakersfield; more than 30 years of experience in California history, cultural resource management, and architectural history. Contribution: Historical Resources Evaluation Report.

Todd Patrick Byers, Associate Environmental Planner (Archaeology). B.A., Anthropology, California State University, Fresno; 8 years of experience in California archaeology. Contribution: Historic Property Survey Report and Archaeological Survey Report and Supplemental Reports.

Lucy Colwell, Environmental Planner. M.A., Education, National University; B.A., Management of Human Resources, Fresno Pacific University; 7 years of environmental planning experience. Contribution: Farmland Impact Assessment.

Ronald Cummings, Principal Scientist, Parsons Corporation, working at Caltrans as a Staff Augmentation Biologist. B.S., General Biology, Oregon State University, Corvallis, Oregon; 26 years of combined experience in terrestrial field biology, environmental analysis, and biological resource management. Contribution: Natural Environment Study.

Rajeev Dwivedi, Associate Engineering Geologist. Ph.D., Environmental Engineering, Oklahoma State University, Stillwater; 21 years of

environmental technical studies experience. Contribution: Water Quality Assessment and Air, Noise and Water Memo.

Tom Fisher, Central Region Hydraulic Engineer. B.S., Civil Engineering, San Jose State University; 25 years of hydraulics/hydrology experience. Contribution: Location Hydraulic Study.

Susan Greenwood, Associate Environmental Planner. B.S., Environmental Health Science, California State University, Fresno; more than 21 years of environmental health, hazardous waste, and hazardous material management experience. Contribution: Preliminary Site Investigation.

Mohammad Hashem, Transportation Engineer. B.S., Civil Engineering, University of Stuttgart in Germany; 26 years of experience in civil engineering. Contribution: Project Engineer.

Kelly Hobbs, Senior Environmental Planner. B.A., History, California State University, Fresno; 14 years of experience in California history; 10 years of experience in environmental planning management. Contribution: Senior Environmental Planner.

Wendy Kronman, Associate Environmental Planner. M.A., Linguistics, California State University, Fresno; Certificate in Horticulture, Merritt College, Oakland; B.A., Anthropology, Sonoma State University; 9 years of environmental planning experience. Contribution: Prepared the Initial Study.

Mandy Marine, Associate Environmental Planner/Native American Coordinator. B.A., Anthropology, California State University, Fresno; more than 21 years of California archaeology experience. Contribution: Native American coordination.

Michelle Ray, Senior Environmental Planner. B.S., Environmental Toxicology, University of California, Riverside; 9 years of environmental planning experience. Contribution: supervising Senior Environmental Planner.

Richard C. Stewart, Engineering Geologist, P.G. B.S., Geology, California State University, Fresno; more than 21 years of hazardous waste and water quality experience; 7 years of paleontology/geology experience. Contribution: Paleontological Identification Report.

Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

Supporting documentation of all California Environmental Quality Act checklist determinations is provided in Chapter 2 of this document. Documentation of “No Impact” determinations is provided at the beginning of Chapter 2. Discussion of all impacts, avoidance, minimization, and/or mitigation measures is under the appropriate topic headings in Chapter 2.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

IV. BIOLOGICAL RESOURCES: Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included			

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans' determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.			
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) 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?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing 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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) 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?	☐	☐	☐	☒
j) Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
(f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial 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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVIII. 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, substantially 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 which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov

Flex your power!
Be energy efficient!

March 16, 2012

NON-DISCRIMINATION
POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact Mario Solis, Manager, Title VI and Americans with Disabilities Act Program, California Department of Transportation, 1823 14th Street, MS-79, Sacramento, CA 95811. Phone: (916) 324-1353, TTY 711, fax (916) 324-1869, or via email: *mario_solis@dot.ca.gov*.

MALCOLM DOUGHERTY
Acting Director

"Caltrans improves mobility across California"

Appendix C Minimization and/or Mitigation Summary

Farmland

No mitigation measures are proposed. Caltrans will compensate landowners for property acquired for the project.

Utilities/Emergency Services

Relocation of PG&E and Southern California Edison electrical poles and the Stone Corral Irrigation District pipe will take place prior to the start of construction.

Caltrans has met with the irrigation district and is working with them to coordinate the timing of relocating their pipe. Following construction this irrigation pipe will be reattached to the wider bridge.

Caltrans will continue to coordinate with the U.S. Bureau of Reclamation and the Friant Water Authority regarding work in the Friant-Kern Canal.

Cultural Resources

All changes to the Friant-Kern Canal Bridge (No. 46-0065) and the Friant-Kern Canal banks and bed would be completed in a manner consistent with the Secretary of the Interior Standards for Rehabilitation of Historic Properties, including the replacement of the original bridge railing with Type 80 concrete railing. A Caltrans architectural historian will monitor construction activities at this bridge.

An ESA Action Plan has been prepared for the project. The identified surface features of the archaeological site and the buried deposit will be protected during construction. Native American monitors will be present during all ground-disturbing activities, and a Caltrans archaeologist will monitor the area during construction activities.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will cease until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to California Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which

will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the District 6 Cultural Resources Branch so that that staff may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Water Quality and Storm Water Runoff

The total disturbed soil area for the project would be 2.62 acres. Because the disturbed soil area would be more than 1 acre at Sand Creek Bridge and the Kaweah River Bridge a Stormwater Pollution Prevention Plan would be required for each location under Caltrans Statewide Permit.

Since the disturbed soil area would be less than 1 acre at the Friant-Kern Canal location, the contractor would be required to prepare a Water Pollution Control Program prior to construction and to implement it during construction. Compliance with the Water Pollution Control Program should adequately address protecting surface water quality from pollution.

The following avoidance and minimization measures are recommended to minimize short-term construction and long-term operational water quality impacts associated with implementation of the project:

- The project activities shall conform to the requirements of the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity (Final Order No. 2012-011-DWQ, NPDES No. CAS000003) and any subsequent General Permit in effect at the time of project construction.

- This permit authorizes storm water and authorized non-storm water discharges from Caltrans construction properties, facilities, and activities and would be required prior to commencement of the construction phase of the project. As part of this permit requirement, a Water Pollution Control Program shall be prepared at the Friant-Kern Canal in accordance with Caltrans 2010 Standard Specification Section 13.1-Water Pollution Control prior to construction consistent with the requirements of the Central Valley Regional Water Quality Control Board. The Water Pollution Control Program will incorporate all applicable best management practices to ensure that adequate measures are taken during construction to minimize water quality impacts. For the Sand Creek and at the Kaweah River

locations a Storm Water Pollution Prevention Plan shall be prepared which would outline the specific water pollution controls required for the project to maintain compliance with the Construction General Permit.

- The project will require dewatering in the Friant-Kern Canal and the Kaweah River during construction. The dewatering activities need to conform to the requirements of the General Waste Discharge Requirements/National Pollutant Discharge Elimination System (NPDES) Permit for Dewatering and Other Low Threat Discharges to Surface Waters (Order No. R5-2008-0081/NPDES Permit No. CAG995001). A Notice of Intent shall be submitted to the Central Valley Regional Water Quality Control Board for approval before dewatering may commence. A completed Notice of Termination Form shall be submitted to the Central Valley Regional Water Quality Control Board after the permitted discharge is complete.

- Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in Section 21-Erosion Control of the Caltrans Standard Specifications and the special provisions included in the contract for the project.

- To the extent practicable, activities that increase the erosion potential shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and shall be maintained until permanent erosion control structures are in place.

- Suitable best management practices, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.

- All disturbed areas would be restored to pre-construction contours.

Construction specifications shall include the following measures to minimize the potential for adverse effects resulting from accidental spills of pollutants (e.g., fuel, oil, grease):

- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.

- Equipment and hazardous materials shall be stored a minimum of 50 feet away from surface water features.

- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 feet away from surface water features or within an adequate fueling containment area.

Hazardous Waste or Materials

- Prior to removal of the railings of the Sand Creek Bridge, the contractor is required to notify the San Joaquin Valley Air Pollution Control District to comply with the National Emission Standards for Hazardous Air Pollutants that applies to asbestos-containing materials.

- During construction, the contractor will have to comply with Caltrans' Nonstandard Special Specifications Provisions to properly handle and dispose of lead-based paint present on the Friant-Kern Canal Bridge.

- Prior to construction, the contractor will be required to complete a Lead Compliance Plan.

Natural Communities

Loss of riparian vegetation (cottonwood trees and willow clumps) will be compensated for by planting replacement trees at a 3:1 ratio for anything less than 24 inches in diameter at breast height and at a 10:1 ratio for trees/bushes with a main stem greater than or equal to 24 inches in diameter at breast height. The replanting will occur in a location appropriate for the reestablishment of riparian habitat similar to that which was lost to the project, as agreed to by the California Department of Fish and Wildlife.

Wetlands and Other Waters

In-lieu fee payments will be made to the National Fish and Wildlife Foundation In-Lieu Fee program to compensate for permanent impacts to U.S. Army Corps of Engineers' jurisdictional Waters of the U.S.

Best management practices would be included so that the smallest practical footprint would be used to minimize temporary, indirect, and permanent impacts to jurisdictional waters of the U.S. Where possible, in-channel work will be performed when channels are dry or at low-flow conditions. Refueling, maintenance, and staging of vehicles and equipment would not be permitted within the waters of the U.S. channel. Spill control and containment measures would be employed to prevent equipment fluids from contaminating waterways and groundwater on the project site. Erosion control measures would be implemented to prevent impacts to water quality due to runoff.

Animal Species

Caltrans Standard Special Provision 14-6.03 protects nesting birds by establishing a no-work buffer zone until young birds have fledged.

The contractor would be responsible for installing and maintaining exclusionary devices under the bridge prior to February 15 of the first year of construction to prevent nesting during construction. A Caltrans Non-Standard Special Provision would be included in the construction contract to allow removal of swallow nests or the use of devices to exclude swallows between September 1 and February 14.

A pre-construction bat survey should be performed prior to the removal of roost tree habitat at the Sand Creek Bridge location and by the Kaweah River Bridge. Any removal of roosting habitat (trees) should be performed in the winter months after the bats have migrated south for the winter. Pre-construction surveys will be required to confirm the presence or absence of bats on the Friant-Kern Canal Bridge.

The project may include the temporary exclusion of bats from a night roost located on the underside of the Kaweah River Bridge during construction. The contractor would be responsible for installing and maintaining exclusionary devices under the bridge prior to construction. The same device used for swallow exclusion may also be used for bats.

Burrowing Owl

With implementation of the avoidance and minimization measures listed below, no impacts are expected to the burrowing owl. Therefore, no compensatory mitigation is proposed for potential impacts to burrowing owl habitat.

- Preconstruction surveys prior to ground disturbance would be conducted to search for burrowing owls within and adjacent to the project impact area at the Sand Creek and Friant-Kern Canal locations.
- No disturbance should occur within 160 feet of burrows occupied by burrowing owls during the non-breeding season (September 1 through January 31) or within 250 feet during the breeding season (February 1 through August 31) unless a qualified biologist approved by the California Department of Fish and Wildlife verifies that either: (1) the birds have not begun egg laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- If burrowing owls are observed prior to construction, mitigation guidelines would include passive relocation and installation of exclusionary devices.
- Owls would be excluded from the project impact area and within a 160-foot buffer zone with the installation of one-way doors in burrow entrances. One-way doors would be left in place for 48 hours to ensure that owls have left the burrows before excavation. The project area would then be monitored daily for the next week to confirm owl use of alternate burrows before excavating burrows in the project impact area.
- Whenever possible, hand tools would be used to excavate burrows and burrows would be refilled once excavated to avoid reoccupation.
- One alternative natural or artificial burrow would be provided for each burrow that would be excavated in the project impact area. The relocated burrow must be located in an area with a minimum of 6.5 acres of suitable foraging habitat adjacent to or connected to the relocated burrow, for each pair of burrowing owls relocated.

Threatened and Endangered Species

Valley Elderberry Longhorn Beetle

No avoidance, minimization, or mitigation measures are required as stated in the concurrence received from the U.S. Fish and Wildlife Service. It has determined that the threatened species is not present in the project area.

San Joaquin Kit Fox

No avoidance, minimization, or mitigation measures are required as stated in the concurrence received from the U.S. Fish and Wildlife Service. The following avoidance and minimization measures will be implemented by the project:

- Preconstruction/pre-activity surveys would be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox.
- If natal/pupping dens are discovered within the project area or within 200 feet of the project boundary, the U.S. Fish and Wildlife Service would be immediately notified.
- The configuration of exclusion zones around San Joaquin kit fox dens should have a 50-foot radius around potential dens and a 100-foot radius around known dens. In instances where the 50 and 100 foot exclusion zones cannot be maintained, the dens will be monitored. Once these dens are verified to be unoccupied, they will be temporarily blocked via sandbagging or the installation of a one-way door, for the duration of the project.
- Disturbance to all San Joaquin kit fox dens would be avoided to the maximum extent possible.
- A qualified biologist would be present at the construction site during initial ground-disturbing activities. To the extent possible, a biologist would be available on-call during all construction periods when not present on-site.
- All food-related trash items will be disposed of in closed containers and removed daily from the entire project site in order to reduce the potential for attracting predator species.
- The U.S. Fish and Wildlife Service Standard Measures for Protection of the San Joaquin Kit Fox for Prior to or During Ground Disturbance, Construction and On-Going Operational Requirements, which follow, would also be implemented:

- Project vehicles should observe a 20-miles per hour speed limit in all project areas, except on county roads and State and Federal highways. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.

- All excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Thoroughly inspect holes and trenches for trapped animals before filling. If at any time a trapped or injured kit fox is discovered, the procedures described under the final bullet in this list must be followed.

- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

- No firearms shall be allowed on the project site.

- No pets should be permitted on the project site.

- Use of rodenticides and herbicides in project areas should be restricted. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

- A representative shall be appointed by Caltrans who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the U.S. Fish and Wildlife Service.

- An employee education program should be conducted for any project that has expected impacts to kit fox or other endangered species.

- Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re- contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.

- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.

- Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured or entrapped kit fox. The California Department of Fish and Wildlife contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

- The Sacramento Fish and Wildlife Office and California Department of Fish and Wildlife will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The U.S. Fish and Wildlife Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The California Department of Fish and Wildlife contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.

Appendix D Farmland Impact Rating and Farmland Maps

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request April 6, 2015
Name of Project BridgeWidening&Railing Replacements	Federal Agency Involved Caltrans
Proposed Land Use widen three bridges & approaches	County and State Tulare County, California
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 4/6/2015 — Person Completing Form: Bradley Bennett

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 550,342	Average Farm Size 223
Major Crop(s) Cotton, Citrus, Alfalfa	Farmable Land In Govt. Jurisdiction Acres: 638,799 % 20.7	Amount of Farmland As Defined in FPPA Acres: 867,965 % 28.1	
Name of Land Evaluation System Used California Storie System	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 4/8/2015	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	5.14			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	5.14			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1.2			
B. Total Acres Statewide Important or Local Important Farmland	1.92			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0006 %			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	N/A			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	55			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	10			
4. Protection Provided By State and Local Government	(20)	20			
5. Distance From Urban Built-up Area	(15)	10			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	8			
9. Availability Of Farm Support Services	(5)	4			
10. On-Farm Investments	(20)	7			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	94	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	55	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	94	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	149	0	0	0

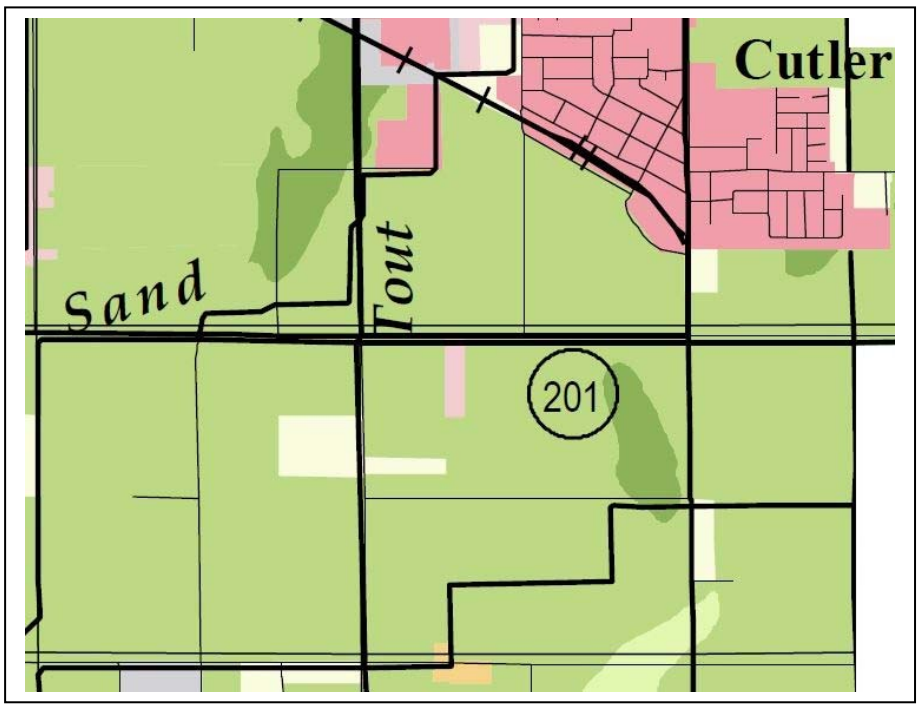
Site Selected: Build Alternative	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

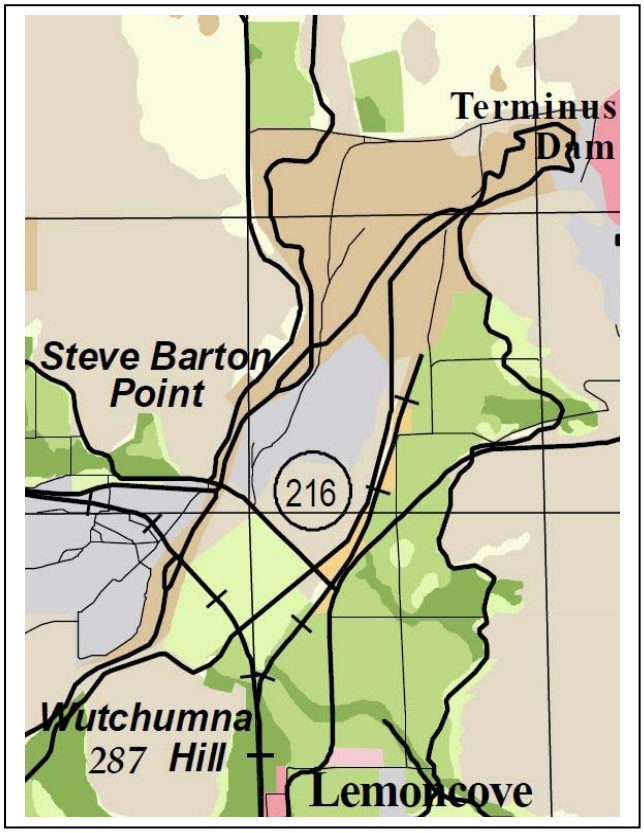
Note 3 locations: SR 201 at Sand Creek Bridge -1.94 acres
SR 201 at Friant-Kern Canal Bridge - 0 acres
SR 216 at Kaweah River Bridge - 3.20 acres

Name of Federal agency representative completing this form: Wendy Kronyman — Date: 4-8-15

(See Instructions on reverse side) Form AD-1006 (03-02)



Sand Creek Bridge



Kaweah River Bridge

PRIME FARMLAND

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF LOCAL IMPORTANCE

LANDS THAT PRODUCE DRYLAND GRAINS (BARLEY AND WHEAT); LANDS THAT HAVE PHYSICAL CHARACTERISTICS THAT WOULD QUALIFY FOR "PRIME" OR "STATEWIDE IMPORTANT" FARMLANDS EXCEPT FOR THE LACK OF IRRIGATION WATER; AND LANDS THAT CURRENTLY SUPPORT CONFINED LIVESTOCK, POULTRY, AND/OR AQUACULTURE OPERATIONS.

GRAZING LAND

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

CONFINED ANIMAL AGRICULTURE

CONFINED ANIMAL AGRICULTURAL LANDS INCLUDE POULTRY FACILITIES, FEEDLOTS, DAIRY FACILITIES, AND FISH FARMS. IN SOME COUNTIES, CONFINED ANIMAL AGRICULTURE IS A COMPONENT OF THE FARMLAND OF LOCAL IMPORTANCE CATEGORY.

NONAGRICULTURAL AND NATURAL VEGETATION

NONAGRICULTURAL AND NATURAL VEGETATION INCLUDES HEAVILY WOODED, ROCKY OR BARREN AREAS, RIPARIAN AND WETLAND AREAS, GRASSLAND AREAS WHICH DO NOT QUALIFY FOR GRAZING LAND DUE TO THEIR SIZE OR LAND MANAGEMENT RESTRICTIONS, SMALL WATER BODIES AND RECREATIONAL WATER SKI LAKES. CONSTRUCTED WETLANDS ARE ALSO INCLUDED IN THIS CATEGORY.

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND

SEMI-AGRICULTURAL AND RURAL COMMERCIAL LAND INCLUDES FARMSTEADS, AGRICULTURAL STORAGE AND PACKING SHEDS, UNPAVED PARKING AREAS, COMPOSTING FACILITIES, EQUINE FACILITIES, FIREWOOD LOTS, AND CAMPGROUNDS.

VACANT OR DISTURBED LAND

VACANT OR DISTURBED LAND INCLUDES OPEN FIELD AREAS THAT DO NOT QUALIFY FOR AN AGRICULTURAL CATEGORY, MINERAL AND OIL EXTRACTION AREAS, OFF ROAD VEHICLE AREAS, ELECTRICAL SUBSTATIONS, CHANNELIZED CANALS, AND RURAL FREEWAY INTERCHANGES.

RURAL RESIDENTIAL LAND

RURAL RESIDENTIAL LAND INCLUDES RESIDENTIAL AREAS OF ONE TO FIVE STRUCTURES PER TEN ACRES.

URBAN AND BUILT-UP LAND

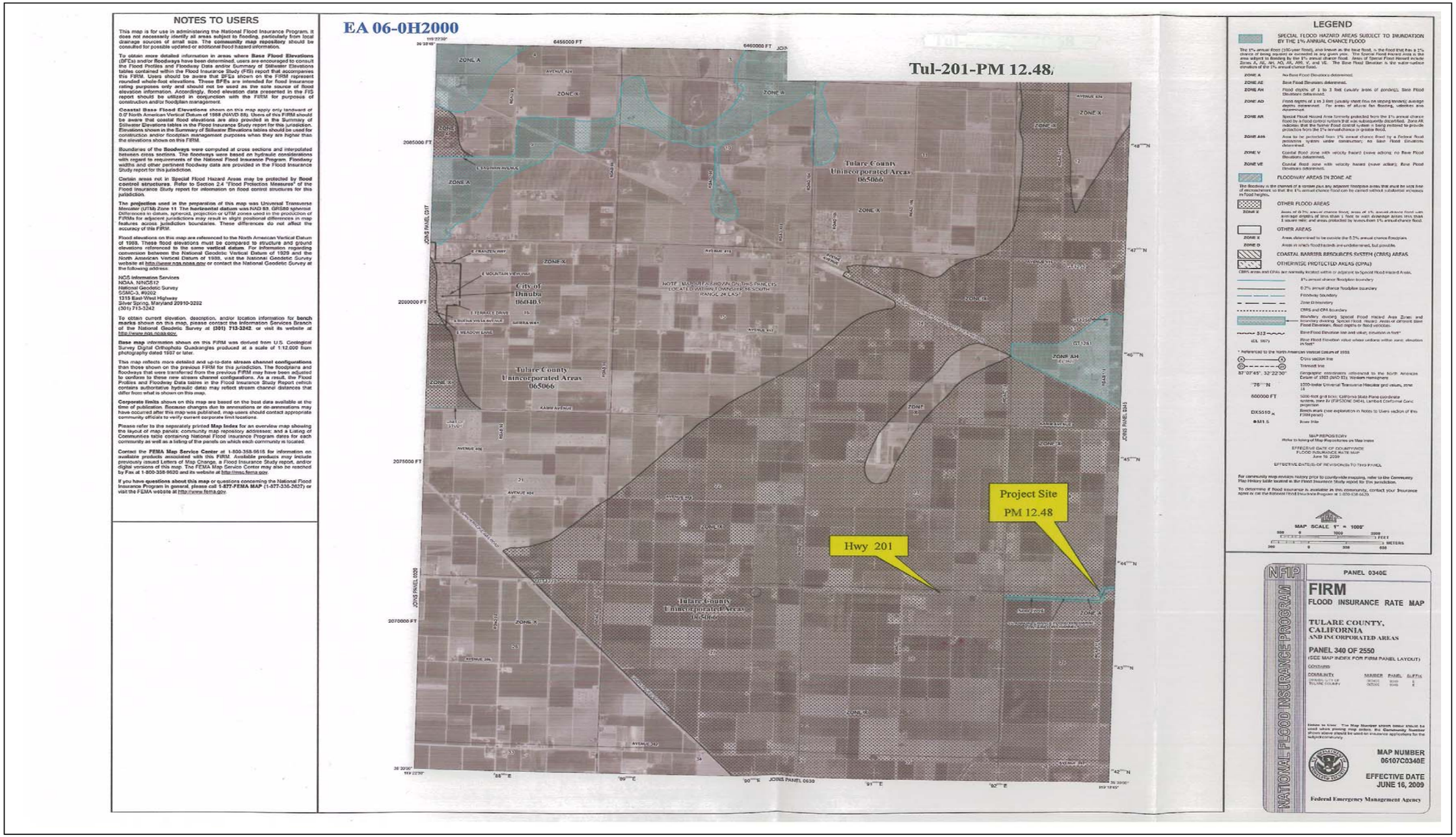
URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

WATER

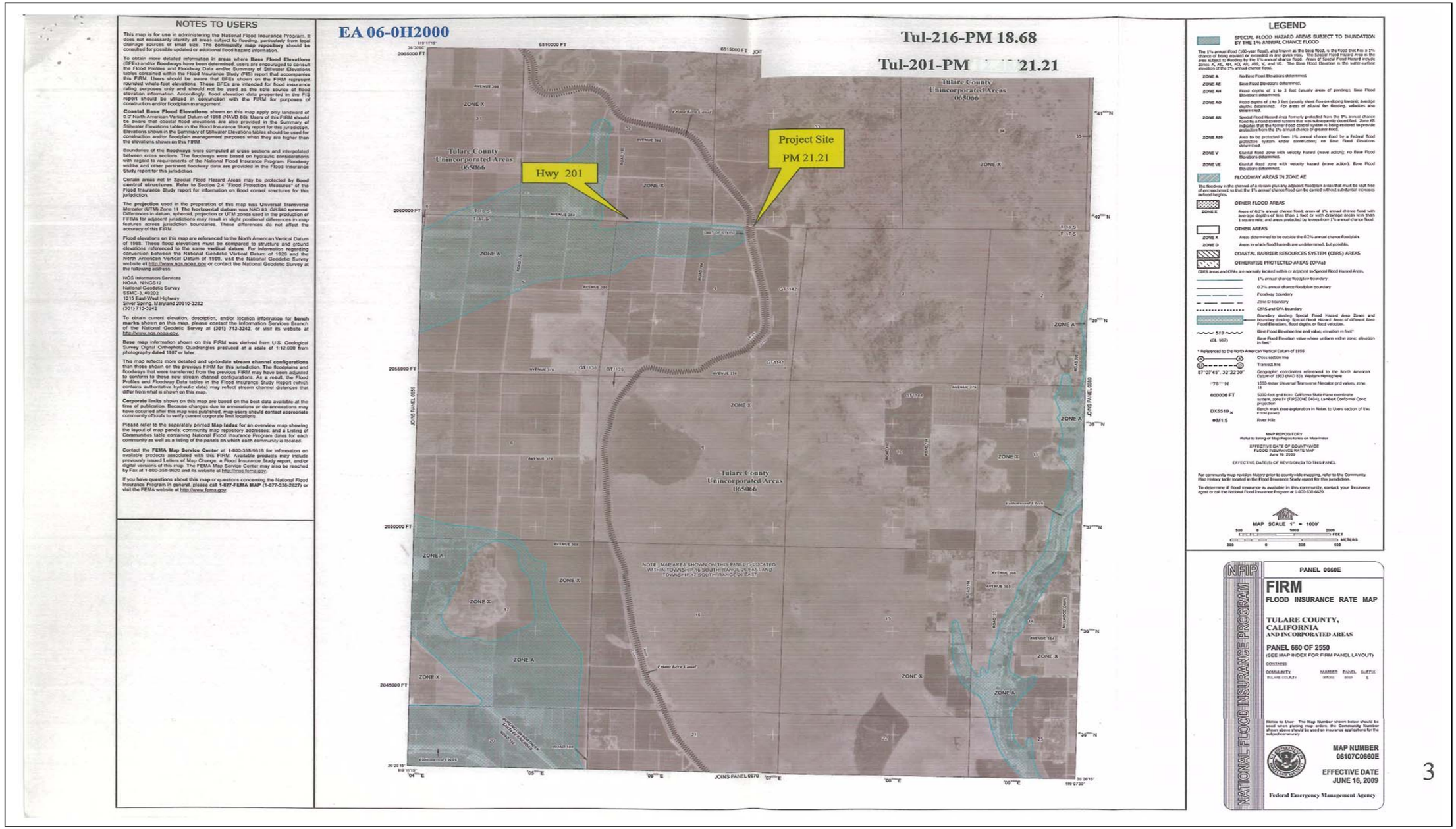
PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.

From Tulare County Important Farmland Mapping 2012, Sheet 1

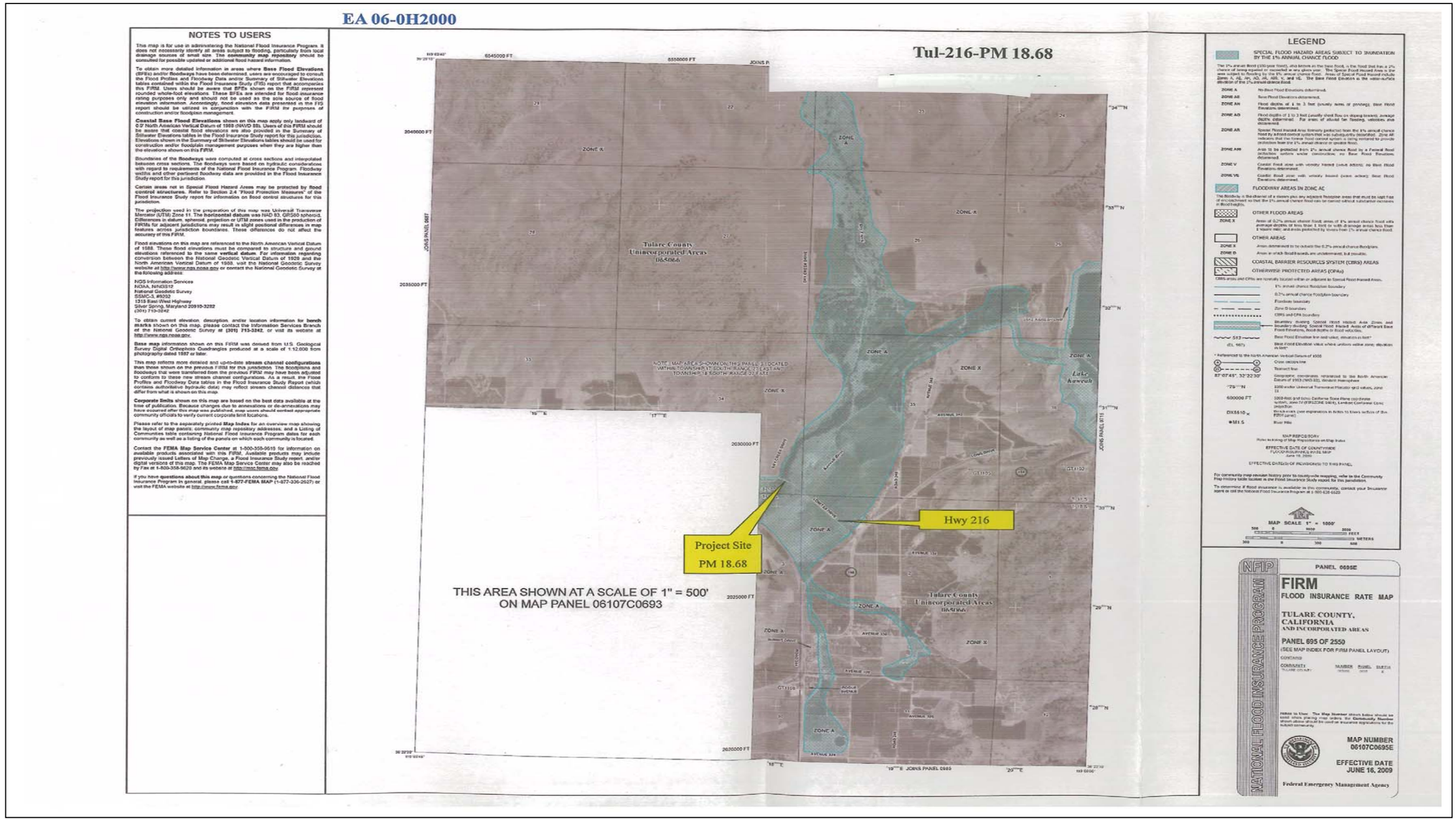
Appendix E Floodplain Maps



Sand Creek Bridge



Friant-Kern Canal Bridge



Kaweah River Bridge

Appendix F Federal, State and California Native Plant Society Species Lists

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 150312093724

Current as of: March 12, 2015

Quad Lists

WOODLAKE (333A)

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Fish

Hypomesus transpacificus

delta smelt (T)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana 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)

Mammals

Vulpes macrotis mutica

San Joaquin kit fox (E)

Plants

Chamaesyce hooveri

Critical habitat, Hoover's spurge (X)

Orcuttia inaequalis

Critical habitat, San Joaquin Valley Orcutt grass (X)

San Joaquin Valley Orcutt grass (T)

Pseudobahia peirsonii

San Joaquin adobe sunburst (T)

Tuctoria greenei

Greene's tuctoria (=Orcutt grass) (E)

Candidate Species

Amphibians

Rana muscosa

mountain yellow-legged frog (C)

IVANHOE (333B)

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardi

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus

delta smelt (T)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana 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)

Mammals

Dipodomys nitratoides nitratoides

Tipton kangaroo rat (E)

Vulpes macrotis mutica

San Joaquin kit fox (E)

Plants

Chamaesyce hooveri

Critical habitat, Hoover's spurge (X)

Hoover's spurge (T)

Orcuttia inaequalis

Critical habitat, San Joaquin Valley Orcutt grass (X)

San Joaquin Valley Orcutt grass (T)

ORANGE COVE SOUTH (356D)

Listed Species

Invertebrates

Branchinecta lynchi

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardi

vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus

delta smelt (T)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Reptiles

Gambelia (=Crotaphytus) sila

blunt-nosed leopard lizard (E)

Thamnophis gigas

giant garter snake (T)

Mammals

Vulpes macrotis mutica

San Joaquin kit fox (E)

Plants

Orcuttia inaequalis

San Joaquin Valley Orcutt grass (T)

Pseudobahia peirsonii

San Joaquin adobe sunburst (T)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.
See our Protocol and Recovery Permits pages.

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 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "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, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the 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, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of 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 needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact

Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be June 10, 2015.

06-0H200, Sand Creek Site: CNDDB Query, 3-Mile Radius. Query Date: March 16, 2015

SCIENTIFIC NAME	COMMON NAME	QUAD NAME	SITE DATE	Federal Status	State Status
Lithobates pipiens	northern leopard frog	Monson	10/4/1961	None	SSC

06-0H200, Friant-Kern Site: CNDDB Query, 3-Mile Radius. Query Date: March 16, 2015

SCIENTIFIC NAME	COMMON NAME	QUAD NAME	SITE DATE	Federal Status	State Status	RARE PLANT RANK
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Ivanhoe	8/6/2010	Threatened	Endangered	1B.1
Talanites moodyae	Moody's gnaphosid spider	Ivanhoe	2/5/1992	None	None	
Empidonax traillii	willow flycatcher	Stokes Mtn.	6/3/1988	None	Endangered	
Eryngium spinosepalum	spiny-sepaled button-celery	Ivanhoe	6/18/1992	None	None	1B.2
Eryngium spinosepalum	spiny-sepaled button-celery	Ivanhoe	8/25/2012	None	None	1B.2
Branchinecta lynchi	vernal pool fairy shrimp	Ivanhoe	5/10/2012	Threatened	None	
Branchinecta lynchi	vernal pool fairy shrimp	Ivanhoe	1/13/2011	Threatened	None	

06-0H200, Kaweah River Site: CNDDB Query, 3-Mile Radius. Query Date: March 16, 2015.

SCIENTIFIC NAME	COMMON NAME	QUAD NAME	SITE DATE	Federal Status	State Status	RARE PLANT RANK
Gymnogyps californianus	California condor	Frazier Valley	9/17/1976	Endangered	Endangered, FP	
Eryngium spinosepalum	spiny-sepaled button-celery	Woodlake	5/29/1989	None	None	1B.2
Emys marmorata	western pond turtle	Kaweah	Unknown	None	SSC	
Spea hammondii	western spadefoot	Woodlake	4/9/1978	None	SSC	
Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	Woodlake	1992	None	None	
Ardea herodias	great blue heron	Woodlake	2/13/1986	None	None	
Brodiaea insignis	Kaweah brodiaea	Woodlake	4/23/1989	None	Endangered	1B.2
Eumops perotis californicus	western mastiff bat	Woodlake	10/11/1994	None	SSC	
Pseudobahia peirsonii	San Joaquin adobe sunburst	Woodlake	4/5/1992	Threatened	Endangered	1B.1

CNPS California Native Plant Society — Rare and Endangered Plant Inventory

Home | About the Inventory | CNPS Home | Join CNPS | Simple Search | Advanced Search

Plant List

3 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad **36119E3**

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	1B.2	S2	G2
Helianthus winteri	Winter's sunflower	Asteraceae	perennial shrub	1B.2	S1S2	G1G2
Pseudobahia peirsonii	San Joaquin adobe sunburst	Asteraceae	annual herb	1B.1	S1	G1

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 16 March 2015].

Orange Cove South 7.5' map

CNPS California Native Plant Society — Rare and Endangered Plant Inventory

Home | About the Inventory | CNPS Home | Join CNPS | Simple Search | Advanced Search

Plant List

7 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad **36119D2**

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Atriplex cordulata var. erecticaulis	Earlimart orache	Chenopodiaceae	annual herb	1B.2	S1	G3T1
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	1B.1	S2	G2
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Chamaesyce hooveri	Hoover's spurge	Euphorbiaceae	annual herb	1B.2	S2	G2
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	1B.2	S2	G2
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	1B.1	S1	G1

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 16 March 2015].

Ivanhoe 7.5' map

CNPS California Native Plant Society — Rare and Endangered Plant Inventory

Home | About the Inventory | CNPS Home | Join CNPS | Simple Search | Advanced Search

Plant List

6 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad **36119D1**

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Brodiaea insignis	Kaweah brodiaea	Themidaceae	perennial bulbiferous herb	1B.2	S1	G1
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	1B.2	S2	G2
Erythranthe sierrae	Sierra Nevada monkeyflower	Phrymaceae	annual herb	4.2	S3	G3
Pseudobahia peirsonii	San Joaquin adobe sunburst	Asteraceae	annual herb	1B.1	S1	G1
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	1B.1	S1	G1

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 16 March 2015].

Woodlake 7.5' map

Appendix G Species Observed in the Biological Study Areas

Sand Creek Biological Study Area		
Plants		
Scientific Name	Common Name	Native/Non-Native
Aceraceae		
Acer sp.	Maple	Not Native
Apiaceae		
Conium maculatum	Poison hemlock	Not Native (I)
Amaranthaceae		
Amaranthus albus	Pigweed	Not native
Asteraceae		
Artemisia douglasiana	Mugwort	Native
Carduus pycnocephalus	Italian thistle	Not Native (I)
Hypochaeris glabra	Smooth cat's ear	Not Native (I)
Matricaria discoidea	Pineapple weed	Not Native
Silybum marianum	Milk thistle	Not Native
Boraginaceae		
Amsinckia intermedia	Common fiddleneck	Native
Brassicaceae		
Brassica nigra	Black mustard	Not Native (I)
Fabaceae		
Medicago polymorpha	Burclover	Not Native (I)
Geraniaceae		
Erodium botrys	Broad leaf filaree	Not Native
Malvaceae		
Malva parviflora	Cheeseweed	Not Native
Poaceae		
Bromus diandrus	Ripgut brome	Not Native (I)
Bromus hordeacus	Soft chess	Not Native (I)
Bromus madritensis ssp. *rubens*	Red brome	Not Native (I)
Hordeum murinum	Foxtail barley	Not Native (I)
Muhlenbergia rigens	Deergrass	Native
Polygonaceae		
Rumex crispus	Curley leaved dock	Not Native (I)
Salicaceae		
Populus fremontii	Fremont cottonwood	Native
Salix Sp.	willow	Native?
Solanaceae		
Datura stramonium	Jimson weed	Not Native
Urticaceae		
Urtica dioica	Stinging nettle	Native

(I) = invasive

Friant-Kern Canal Biological Study Area		
Plants		
Scientific Name	Common Name	Native/Non-Native
Apiaceae		
Anthriscus caucalis	Bur chevril	Not Native
Asteraceae		
Baccharis salicifolia	Seep willow (mulefat)	Native
Centaurea solstitialis	Yellow-star thistle	Not Native (I)
Hypochaeris glabra	Smooth cat's ear	Not Native (I)
Silybum marianum	Milk thistle	Not Native (I)
Boraginaceae		
Amsinckia intermedia	Common fiddleneck	Native
Phacelia Sp.	Phacelia	Native
Brassicaceae		
Brassica nigra	Black mustard	Not Native (I)
Fabaceae		
Acmispon americanus var. *americanus*	Spanish lotus	Native
Lupinus benthamii ver. benthamii	Spider lupine	Native
Geraniaceae		
Erodium cicutarium	Redstem filaree	Not Native (I)
Lamiaceae		
Mentha pulegium	Pennyroyal	Not Native (I)
Onagraceae		
Epilobium brachycarpum	Tall annual willowherb	Native
Poaceae		
Avena fatua	Wild oats	Not Native
Bromus diandrus	Ripgut Brome	Not Native (I)
Bromus madritensis ssp. *rubens*	Red brome	Not Native (I)
Festuca myuros	Rattail sixweeks grass	Not Native (I)
Hordeum murinum	Foxtail barley	Not Native (I)
Triticum spp.	Cultivated wheat	Not Native
Rubiaceae		
Galium aparine	Common bedstraw	Native
Salicaceae		
Populus fremontii	Fremont cottonwood	Native
Salix sp.	willow	Native?
Scrophulariaceae		
Verbascum thapsus	Woolly mullein	Not Native (I)
Solanaceae		
Datura stramonium	Jimson weed	Not Native
Nicotiana glauca	Tree tobacco	Not Native (I)
Vitaceae		
Vitus californica	California grape	Native

(I) = invasive

Kaweah River Biological Study Area		
Plants		
Scientific Name	Common Name	Native/Non-Native
Adoxaceae		
Sambucus nigra ssp. Cerulea	Blue elderberry	Native
Asteraceae		
Artemisia douglasiana	California mugwort	Native
Cotula australis	Brass buttons	Not Native
Erigeron canadensis	Horseweed	Native
Gnaphalium palustre	Cudweed	Native
Boraginaceae		
Phacelia distans	Common phacelia	Native
Convolvulaceae		
Calystegia	Morning glory	Native?
Crassulaceae		
Crassula connata	pygmy weed	Native
Cyperaceae		
Cyperus squarrosus	Umbrella Sedge	Native
Eleocharis macrostachya	Spike rush	Native
Fabaceae		
Cytisus scoparius	Scotch broom	Not Native (I)
Haloragaceae		
Myriophyllum aquaticum	Parrot's feather	Not Native (I)
Juncaceae		
Juncus effusus	Common rush	Native
Lamiaceae		
Mentha pulegium	Pennyroyal	Not Native (I)
Onagraceae		
Clarkia unguiculata	Elegant clarkia	Native
Ludwigia repens	Creeping water primrose	Native
Phrymaceae		
Mimulus guttatus	Yellow monkeyflower	Native
Plantaginaceae		
Veronica peregrine ssp. *xalapensis*	Purselane speedwell	Native
Poaceae		
Bromus diandrus	Ripgut Brome	Not Native (I)
Festuca perennis	Italian rye grass	Not Native (I)
Polypogon monspeliensis	Rabbitsfoot grass	Not Native (I)
Polygonaceae		
Rumex crispus	Curley leaved dock	Not Native (I)
Rosaceae		
Rubus armeniacus	Himalayan blackberry	Not Native (I)
Salicaceae		
Populus fremontii	Fremont cottonwood	Native
Salix exigua	Narrow leaved willow	Native

Kaweah River Biological Study Area		
Plants continued		
Simaroubaceae		
Ailanthus altissima	Tree of heaven	Not Native (I)
Solanaceae		
Solanum americanum	Common nightshade	Native
Typhaceae		
Typha angustifolia	Cattail	Not Native
Urticaceae		
Urtica dioica	Stinging nettle	Native

(I) = invasive

Sand Creek Biological Study Area	
Animals	
Scientific Name	Common Name
Reptiles/Amphibians	
Sceloporus occidentalis	Western Fence Lizard
Birds	
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Corvus brachyrhynchos	American Crow
Petrochelidon pyrrhonota	Cliff Swallow
Mammals	
Otospermophilus beecheyi	California Ground Squirrel

Friant-Kern Canal Biological Study Area	
Animals	
Scientific Name	Common Name
Birds	
Bubo virginianus	Great horned owl (road kill)
Petrochelidon pyrrhonota	Cliff Swallow
Mammals	
Order Chiroptera	Bat guano, unknown species
Procyon lotor	Raccoon (tracks)

Kaweah River Biological Study Area	
Animals	
Scientific Name	Common Name
Reptiles/Amphibians	
Sceloporus occidentalis	Fence lizard
Birds	
Fulica americana	American coot
Anas platyrhynchos	Mallard duck
Buteo lineatus	Red-shouldered Hawk
Cathartes aura	Turkey Vulture
Ardea herodias	Great blue heron (dead)
Agelaius phoeniceus	Red-wing blackbird
Petrochelidon pyrrhonota	Cliff Swallow (nests)
Sayornis nigricans	Black phoebe
Mammals	
Order Chiroptera	Bat guano, unknown species
Didelphis virginiana	Opossum (road kill)
Procyon lotor	Raccoon (tracks)
Odocoileus hemionus	Mule deer (road kill remains & tracks)

Appendix H Federal Endangered Species Act Determinations

Sand Creek Bridge Location

Species	Status (1)	Possible in Which Habitat Type	Acres Habitat Impacts Permanent/ Temporary	Species Impacts Expected After Avoidance and Minimization Measures	FESA Determination
San Joaquin Valley Orcutt grass	FT	Vernal pools	0/0	No, no habitat on site	*No effect.*
San Joaquin adobe sunburst	FT	Valley &foothill grasslands, cismontane woodlands in heavy clay soils.	0/0	No, no habitat on site	*No effect.*
Vernal pool fairy shrimp	FT	Vernal pools	0/0	No, no habitat on site	*No effect.*
Vernal pool tadpole shrimp	FE	Vernal pools	0/0	No, no habitat on site	*No effect.*
Valley elderberry longhorn beetle	FT	Elderberry bushes, usually in riparian areas	0/0	U.S. Fish and Wildlife Service determined project area is outside of the species range.	*No effect.*
Delta smelt	FT	Semi-saline aquatic habitat in the Bay Delta region	0/0	No, no habitat on site, not upstream of suitable habitat	*No effect.*
California tiger salamander, central population	FT	Vernal pools in open grasslands and brushy habitats	0/0	No, no habitat on site	*No effect.*
California red-legged frog	FT	Pools, ponds, slow streams and adjacent riparian areas	0/0	No, no habitat on site	*No effect.*
Blunt-nosed leopard lizard	FE, FP	Arid, open alkali desert scrub habitat with low topographic relief.	0/0	No, no habitat on site	*No effect.*
Giant garter snake	FT	Marshes/aquatic habitats with slow water, & adjacent uplands	0/0	No, no habitat on site	*No effect.*
San Joaquin kit fox	FE	Annual grassland or open, grassy habitat with scattered shrubs with sandy soils and suitable prey base.	1.42/0	Possible. Species not observed but suitable foraging habitat occurs in the area.	*May affect, not likely to adversely affect.*
Note: (1) FE = Federal Endangered; FT = Federal Threatened; SE = State Endangered; ST = State Threatened; FP = Fully Protected					

Friant-Kern Canal Bridge location

Species	Status (1)	Possible in Which Habitat Type	Acres Habitat Impacts Permanent/ Temporary	Species Impacts Expected After Avoidance and Minimization Measures	FESA Determination
Critical habitat, Hoover's spurge	CH	Vernal pools on volcanic mudflow or clay substrate.	0/0	No, no habitat on site	*No effect.*
Hoover's spurge	FT	Vernal pools on volcanic mudflow or clay substrate.	0/0	No, no habitat on site	*No effect.*
Critical Habitat, San Joaquin Valley Orcutt grass	CH	Vernal pools	0/0	No, no habitat on site	*No effect.*
San Joaquin Valley Orcutt grass	FT	Vernal pools	0/0	No, no habitat on site	*No effect.*
Critical Habitat, vernal pool fairy shrimp	CH	Vernal pools	0/0	No, no habitat on site	*No effect.*
Vernal pool fairy shrimp	FT	Vernal pools	0/0	No, no habitat on site	*No effect.*
Valley elderberry longhorn beetle	FT	Elderberry bushes, usually in riparian areas	0/0	U.S. Fish and Wildlife Service determined that the project area is outside of the species range.	*No effect*
Delta smelt	FT	Semi-saline aquatic habitat in the Bay Delta region	0/0	No, no habitat on site, not upstream of suitable habitat	*No effect*
California tiger salamander, central population	FT	Vernal pools in open grasslands and brushy habitats	0/0	No, no habitat on site	*No effect.*
California red-legged frog	FT	Pools, ponds, slow streams and adjacent riparian areas	0/0	No, no habitat on site	*No effect.*
Blunt-nosed leopard lizard	FE, FP	Arid, open alkali desert scrub habitat with low topographic relief.	0/0	No, no habitat on site	*No effect.*

Species	**Status** (1)	**Possible in Which Habitat Type**	**Acres Habitat Impacts Permanent/ Temporary**	**Species Impacts Expected After Avoidance and Minimization Measures**	**FESA Determination**
Giant garter snake	FT	Marshes/aquatic habitats with slow water, & adjacent uplands	0/0	No, no habitat on site	*No effect.*
California condor	FE	Caves & ledges of large cliffs, large trees and snags, forages over open, semi-arid grassland, savannah, and foothill chaparral.	0/0	No, no habitat on site	*No effect.*
Tipton kangaroo rat	FE	Valley sink scrub and saltbrush scrub in the Tulare Basin region.	0/0	No, no habitat on site	*No effect.*
San Joaquin kit fox	FE	Annual grassland or open, grassy habitat with scattered shrubs with sandy soils and suitable prey base.	0/0	No. Orange orchards adjacent to site may be used for dispersal or foraging.	*May affect, not likely to adversely affect.*
Note: (1) FE = Federal Endangered; FT = Federal Threatened; SE = State Endangered; ST = State Threatened; FP = Fully Protected; CH = Critical Habitat					

Kaweah River Bridge Location

Species	Status (1)	Possible in Which Habitat Type	Acres Habitat Impacts Permanent/ Temporary	Species Impacts Expected After Avoidance and Minimization Measures	FESA Determination
Critical Habitat, Hoover's Spurge	CH	Vernal pools on volcanic mudflow or clay substrate	0/0	No, no suitable habitat on site	*No effect.*
Critical Habitat, San Joaquin Valley Orcutt grass	CH	Vernal pools	0/0	No, no suitable habitat on site	*No effect.*
San Joaquin Valley Orcutt grass	FT	Vernal pools	0/0	No, no suitable habitat on site	*No effect.*
San Joaquin adobe sunburst	FT	Valley &foothill grasslands, cismontane woodlands in heavy clay soils	0/0	No, no suitable habitat on site	*No effect.*
Greene's tuctoria	FE	Valley grasslands, in vernal pools	0/0	No, no suitable habitat on site	*No effect.*
Conservancy fairy shrimp	FE	Vernal pools	0/0	No, no suitable habitat on site	*No effect.*
Valley elderberry longhorn beetle	FT	Elderberry bushes, usually in riparian areas	0/0	Habitat (elderberry bushes) occurs on site. However, U.S. Fish and Wildlife Service determined that the project area is outside of the species range.	*No effect*
Delta smelt	FT	Semi-saline aquatic habitat in the Bay Delta region	0/0	No, no habitat on site, not upstream of suitable habitat	*No effect.*
California tiger salamander, central population	FT	Vernal pools in open grasslands and brushy habitats	0/0	No, no habitat on site	*No effect.*
California red-legged frog	FT	Pools, ponds, slow streams and adjacent riparian areas	0/0	No, no habitat on site	*No effect.*

Species	**Status** (1)	**Possible in Which Habitat Type**	**Acres Habitat Impacts Permanent/ Temporary**	**Species Impacts Expected After Avoidance and Minimization Measures**	**FESA Determination**
Mountain yellow-legged frog	FC	Rocky streams, lakes, ponds, pools above 1,000' elevation in Sierra Nevada Mountains	0/0	No, site is below species' elevation range	*No effect.*
Blunt-nosed leopard lizard	FE, FP	Arid, open alkali desert scrub habitat with low topographic relief.	0/0	No, no habitat on site	*No effects*
Giant garter snake	FT	Marshes/aquatic habitats with slow water, & adjacent uplands	0/0	No, no habitat on site	*No effect*
California condor	FT	Caves & ledges of large cliffs, large trees and snags, forages over open, semi-arid grassland, savannah, and foothill chaparral	0/0	No, no habitat on site	*No effect*
San Joaquin kit fox	FE	Annual grassland or open, grassy habitat with scattered shrubs with sandy soils and suitable prey base	3.20/0	Possible. Species not observed but suitable foraging habitat occurs in the area.	*May affect, not likely to adversely affect.*
Note: (1) FE = Federal Endangered; FT = Federal Threatened; SE = State Endangered; ST = State Threatened; FP = Fully Protected					

Appendix I State Office of Historic Preservation Concurrence Letters

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

January 24, 2014 Reply To: FHWA_2013_1220_001

Jeanne Day Binning, Branch Chief
Central California Cultural Resources Branch
Caltrans District 6
855 M Street, Suite 200
Fresno, CA 93721

Re: Determinations of Eligibility for the Proposed State Route 201 and 216 Bridge Rail Replacement Project, Tulare County, CA

Dear Ms. Binning:

Thank you for consulting with me about the subject undertaking in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA).

Caltrans has determined that the Gregory Property at 11618 Avenue 400 is not eligible for the National Register of Historic Places (NRHP). In addition Caltrans is considering Friant-Kern Canal Bridge 46-0065 eligible for the NRHP for the purposes of this undertaking only. Based on review of the submitted documentation, I concur with the foregoing determinations.

Thank you for considering historic properties during project planning. If you have any questions, please contact Natalie Lindquist of my staff at (916) 445-7014 or email at natalie.lindquist@parks.ca.gov .

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer

STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

February 23, 2015 Reply in Reference To: FHWA_2013_1220_001

Jeanne Day Binning, PhD
Chief, Central California Cultural Resources
Caltrans, District 06
855 M Street, Suite 200
Fresno, CA 93721

RE: Determination of Eligibility and Changes in the Area of Potential Effects for the State Route 201 and 216 Bridge Rail Replacement Project; 06-TUL-201, PM 12.4 and 21.2 and 06-TUL-216, PM 18.68; Tulare County, California.

Dear Dr. Binning:

Thank you for your letter of January 16, 2015, continuing consultation regarding the above noted undertaking in accordance with the *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). You are consulting with me under Stipulation VIII.C.6 of the PA on your determination of eligibility to the National Register of Historic Places (NRHP) for prehistoric site CA-TUL-27 at Location 3 of the undertaking and changes to the Area of Potential Effects (APE).

The California Department of Transportation (Caltrans) is proposing to replace existing bridge rails and widen three bridges by twelve feet at three locations on State Route (SR) 201 and SR 216 in Tulare Country, California. In December 2013, you consulted with me on this project; however design changes since then have necessitated supplemental studies and updates to the APE. You have submitted the following documents as evidence of your efforts to identify and evaluate historic properties within the APE:

- *Supplemental Historic Property Survey Report for the State Route 201 and 216 Bridge Widening and Rail Replacement Project in Tulare County, California* (Byers, December 2014);
- *Supplemental Archaeological Survey Report for the State Route 201 and 216 Bridge Widening and Rail Replacement Project in Tulare County, California* (Byers, December 2014)
- *Extended Phase I Investigations at Site CA-TUL-27for the State Route 201 and 216 Bridge Widening and Rail Replacement Project in Tulare County, California* (P. Kaijankoski, 2014)

23 February 2015 FHWA_2013_1220_001
Page 2 of 3

The current APE for the undertaking is dated December 8, 2014 and includes the following changes:
Location 1: Sand Creek Bridge:

- 1.06 acres of new right-of-way will be acquired to realign Road 116;
- 0.13 acres of private land adjacent to Road 116 will be acquired as an easement;
- 0.56 acres of land along SR201 and west of the existing bridge will be acquired.

Location 2: Friant-Kern Canal Bridge:

- A temporary construction easement on the south side of the existing bridge will extend approximately fifty feet in width and 150-feet in length on each side of the bridge.

Location 3: Kaweah River Bridge:

- New right-of-way totaling 3.21 acres will be acquired from six parcels adjacent to the project area to accommodate bridge widening.

The vertical APE ranges in depth from three to ten feet below the soil surface to accommodate grading, post holes, utility pole relocations and rock removal.

Archival research included a records search at the Southern San Joaquin Valley Information Center on July 15, 2013. Two architectural resources were identified within the APE; a single family residence (11618 Avenue 400) and the Friant-Kern Canal (CA-TUL-2873H). These resources were determined not eligible to the NRHP and eligible to the NRHP respectively, by consensus on January 24, 2014. Previously recorded archaeological site CA-TUL-27 was also determined to lie within the APE at Location 3.

Native American consultation included contact with the Native American Heritage Commission (August 23, 2013 and October 21, 2013) and Native American tribes and individuals likely to have knowledge of sites of religious or cultural significance to them in the project area. No such properties were identified through consultation efforts; however, Native American consulting parties confirmed that the project area was culturally sensitive. Consultation has been ongoing and will continue through the life of the project.

A pedestrian survey for the newly-added APE in Location 3 was conducted on March 21, 2014 utilizing transects at five meter intervals. During that survey a bedrock mortar outcrop and lithic flakes were identified on the surface within the APE associated with CA-TUL-27. Extended Phase I subsurface testing (June 3 and 4, 2014) expanded the site boundaries of CA-TUL-27. Caltrans has determined this site eligible to the NRHP under Criteria D. APE changes to all three locations resulted in additional pedestrian survey on August 12 and 29, 2014; utilizing transects spaced at fifteen meter intervals. Additional changes to the APE at Location 3 resulted in pedestrian surveys on September 26, 2014 and December 2, 2104 utilizing transects at ten meter intervals. No new resources were identified during the August, 2014 surveys.

Pursuant to Stipulation VIII.C.6, Caltrans has determined archaeological site CA-TUL-27 is eligible to the NRHP under Criteria D and is asking for my concurrence.

I have no objection to the APE changes dated December 8, 2014 and concur the identification efforts addressing changes in the APE are sufficient. Based on the data presented however, I cannot concur site CA-TUL-27 is eligible to the NRHP. A context was not provided and a formal evaluation was not conducted that includes all Criteria for eligibility to the NRHP as per Stipulation VIII.C.2 of the PA, nor was the site evaluated to determine if it could be included as part of an archaeological district. This will need to be done to determine effects and appropriate

23 February 2015 FHWA_2013_1220_001
Page 3 of 3

mitigation efforts prior to developing a Memorandum of Agreement for the project. I would like to suggest, pursuant to Stipulation VIII.C.4 of the PA, that CA-TUL-27 be assumed eligible to the NRHP for purposes of this project only, as a possible alternative to formal evaluation.

I also have the following additional comments:

1. On page 6 of the Supplement ASR site CA-TUL-27 is identified as CA-FRE-27 in error.
2. I support the use of qualified archaeological and Native American monitoring for all ground disturbing activities at Location 3.
3. I suggest that an Environmentally Sensitive Area (ESA) be established and fenced for the area of CA-TUL-27 outside of the Area of Direct Impact (ADI) for the project and an ESA Action Plan be developed.

I look forward to continuing consultation with you as to a project effects on historic properties and proposed mitigation measures. Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns regarding archaeological resources, please contact Associate State Archaeologist, Kim Tanksley at (916) 445-7035 or by email at kim.tanksley@parks.ca.gov. For questions regarding the built environment, please contact State Historian, Natalie Lindquist at (916)445-7014 or by email at natalie.lindquist@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

Appendix J Response to Comments

The Initial Study with Proposed Mitigated Negative Declaration was circulated to the public from February 27 to March 28, 2014. The Acknowledgement of Receipt from the State Clearinghouse is shown below along with the one comment letter that was received during this period.

Letter from State Clearinghouse, page 1

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

March 28, 2014

Michelle Ray
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, CA 93721

Subject: Widening and Railing Replacements at Three Bridges
SCH#: 2014021064

Dear Michelle Ray:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on March 27, 2014, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Letter from State Clearinghouse, page 2

Document Details Report
State Clearinghouse Data Base

SCH#	**2014021064**
Project Title	Widening and Railing Replacements at Three Bridges
Lead Agency	Caltrans #6
Type	**MND** Mitigated Negative Declaration
Description	Caltrans proposes to widen three existing bridges in rural Tulare County and replace their railings. Sand Creek Bridge (No. 46-0137) is on SR 201 (Avenue 400) at PM 12.48 at County Road 116, 1.8 miles southwest of the town of Cutler. The Friant-Kern Canal Bridge (No. 46-0065) is also located on SR 201 (Avenue 384) at PM 21.21, about 4 miles east of Seville. The Kaweah River Bridge (No. 46-0091) is located on SR 216 (Lomitas Drive) at PM 18.68, about half a mile northwest of Lemon Cove. The purpose of the project is to upgrade two bridges on SR 201 and one bridge on SR 216 to current Caltrans design standards for railings and lane and shoulder widths.

Lead Agency Contact

Name	Michelle Ray		
Agency	California Department of Transportation, District 6		
Phone	559 445 5286	***Fax***	
email			
Address	855 M Street, Suite 200		
City	Fresno	***State*** CA	***Zip*** 93721

Project Location

County	Tulare			
City	Woodlake			
Region				
Lat / Long				
Cross Streets	SR 201/Road 116; SR 201/Friant-Kern Canal; SR 216/Dry Creek Drive			
Parcel No.				
Township		***Range***	***Section***	***Base***

Proximity to:

Highways	Hwy 65, 245, 198
Airports	
Railways	
Waterways	Sand Creek, Friant-Kern Canal, Kaweah River
Schools	
Land Use	transportation, agriculture, canal

Project Issues	Archaeologic-Historic; Biological Resources; Flood Plain/Flooding; Toxic/Hazardous; Water Quality; Wetland/Riparian
Reviewing Agencies	Resources Agency; Department of Conservation; Department of Fish and Wildlife, Region 4; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Air Resources Board; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Fresno); Native American Heritage Commission; Central Valley Flood Protection Board

Date Received 02/26/2014 ***Start of Review*** 02/26/2014 ***End of Review*** 03/27/2014

Central Valley Flood Protection Board Letter, Page 1

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-2380 FAX: (916) 574-0682

March 17, 2014

Ms. Michelle Ray
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: CEQA Comments: Widening and Railing Replacements at Three Bridges, Mitigated Negative Declaration SCH No. 2014021064

Location: Sand Creek Bridge (No. 46-0137) is on SR 201 (Avenue 400) at PM 12.48 at County Road 116, 1.8 miles southwest of the town of Cutler

Kaweah River Bridge (No. 46-0091) is located on SR 216 (Lomitas Drive) at PM 18.68, about half a mile northwest of Lemon Cove

Dear Ms. Ray:

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

The proposed projects are located adjacent to or within Sand Creek and the Kaweah River which are under Board jurisdiction. The Board enforces its Title 23, California Code of Regulations (23 CCR) for the construction, maintenance, and protection of adopted plans of flood control that protect public lands from floods. Adopted plans of flood control include federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2).

A Board permit is required prior to working in the Board's jurisdiction for the following:

1

- Placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee (23 CCR Section 6);
- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (23 CCR Section 6);
- Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each

Central Valley Flood Protection Board Letter, Page 2

Ms. Michelle Ray
March 17, 2014
Page 2 of 2

type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance to prevent the interference with flood control operations, levee maintenance, inspection, and flood fight procedures (23 CCR Section 131).

Accumulation and establishment of woody vegetation that is not managed may have negative impacts on channel capacity and may increase the potential for levee over-topping or other failure. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity. 2

Adverse hydraulic impacts of proposed encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible off-site mitigation outside of the Board's jurisdiction should be used when mitigating for vegetation removed at the project location. 3

Other local, federal and State agency permits may be required and are the responsibility of the applicant to obtain.

Board permit application forms and our complete 23 CCR regulations can be found on our website at http://www.cvfpb.ca.gov/. Maps of the Board's jurisdiction including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board designated floodways are also available on a Department of Water Resources website at http://gis.bam.water.ca.gov/bam/.

If you have any questions please contact James Herota at (916) 574-0651, or via email at james.herota@water.ca.gov.

Sincerely,

Len Marino, P.E.
Chief Engineer

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Response to Central Valley Flood Protection Board

Comment 1: As stated in the draft environmental document Caltrans will apply for a Central Valley Flood Protection Board permits for work at Sand Creek and at the Kaweah River during the Plans, Specifications and Estimates Phase of the project (see Table 1.1, Permits and Approvals Needed).

Comment 2: The project will not measurably decrease the floodway channel capacity of Sand Creek by adding six new 24-inch diameter piers to the creek. Neither would five new bridge piers, approximately 24 inches wide by 96 inches long, measurably decrease the floodway channel capacity of the Kaweah River. Therefore, mitigations are not needed to avoid decreasing floodway channel capacity.

Comment 3: Construction of the bridge piers will not decrease channel capacity or change the channel characteristics of Sand Creek or the Kaweah River. Since there will be no impact Caltrans does not propose any flow mitigation in the channel. The California Department of Fish & Wildlife may require on-site revegetation plantings within the river bed as mitigation under the 1602 Streambed Alteration Agreement permit.

Appendix K U.S. Fish and Wildlife Service Concurrence Letters

United States Department of the Interior

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

In Reply Refer to:
08ESMF00-
2014-I-0315

AUG 20 2014

Mr. Javier Almaguer
Chief, Central Region Biology South Branch
California Department of Transportation, District 6
855 M Street, Suite 200
Fresno, California 93721

Subject: Informal Consultation for the Tulare Bridge Upgrade Project, Tulare County, California (California Department of Transportation 06-TUL-201-PM 12.48; 06-TUL-201-PM 21.21; 06-TUL-216-PM 18.69; EA 06-0H200)

Dear Mr. Almaguer:

This is the U.S. Fish and Wildlife Service's (Service) response to the California Department of Transportation's (Caltrans) request for concurrence on its action to construct the Tulare Bridge Upgrade Project (project) in Tulare County, California.

The Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 16, 2012. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) assignment Memorandum of Understanding (MOU) between the Federal Highway Administration (FHWA) and Caltrans (effective October 1, 2012), as codified in 23 U.S.C. 327. The MOU allows Caltrans to assume the FHWA's responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for the majority of transportation projects in California.

In your recent letter of March 24, 2014, which we received in our office on March 26, 2014, you proposed to address adverse effects to the federally-listed as threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) based on the identification of 32 elderberry shrubs (*Sambucus* sp.) during surveys of the project area. Per 50 CFR 402.12(d)(1), we are notifying you that we have determined, based on the best available data, that the valley elderberry longhorn beetle is not present in your project action area. Therefore, further consultation for this species is not required for this project.

In your letter, you also determined that the proposed project may affect, but is not likely to adversely affect the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*); consequently, you requested concurrence from the Service with your determination. This document has been prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*) (Act).

The findings and recommendations of this letter are based on: (1) Caltrans' March 24, 2014, letter, and the accompanying March 2014 *Tulare Bridge Upgrade Project Biological Assessment* (BA); (2) email correspondence between the Service and Caltrans; and (3) other information available to the Service.

Project Description

Caltrans proposes to upgrade three bridges (two on State Route (SR) 201 and one on SR 216) in order to meet the current design standards for railings, and lane and shoulder widths. Travel lanes at each bridge site will be widened to 12 feet (ft.), and shoulders will be widened to 8 ft. Dewatering of the respective channels will be required in order to install new bridge piers and columns.

1) *Sand Creek Bridge* (Bridge Number 46-0137) is located at postmile (PM) 12.48 on SR 201, immediately west of Road 116 and southwest of the community of Cutler. Caltrans proposes to remove all railings and replace them with an upgraded design; widen the structure by 6 ft. 5 inches on either side to increase its total width to 44 ft.; add six new 24 inch diameter columns, one on either side of three existing bents; widen the roadway approaches, and smooth the approach and departure transitions by grinding; remove the existing asphalt overlay; relocate the SR 201/Road 116 intersection further east, which will require 0.62 acres (ac) of new right-of-way (ROW) acquired from a privately owned parcel; install new guardrails in all four quadrants of the bridge; and relocate three utility poles.

A 40 ft. wide by 200 ft. long temporary construction easement will be required on each side of the bridge. Work activities also will require 0.31 acres (ac) of temporary construction access easements from adjacent private properties located outside of the existing Caltrans ROW. Equipment staging is proposed to occur just south of the bridge near the existing Road 116 alignment.

2) *Friant-Kern Canal Bridge* (Bridge Number 46-0065) is located at PM 21.21 on SR 201, approximately 1.5 miles (mi) east of the intersection with Road 172 near the community of Yettem. Caltrans proposes to remove all railings and replace them with an upgraded design; widen the structure by 6 ft. 5 inches on either side to increase its total width to 44 ft.; add four new columns, one on either side of two existing bents; widen the roadway approaches, and smooth the approach and departure transitions by grinding; remove the existing asphalt overlay; seal cracks with methacrylate; realign the access driveways adjacent to the bridge in all four quadrants; install new metal beam guardrails (MBGR) and standard terminal systems; relocate three utility poles; and relocate 200 ft. of irrigation pipe currently attached to the bridge structure.

Construction easements measuring 40 ft. wide by 225 ft. long on the north side of the bridge and 40 ft. wide by 200 ft. long on the south side of the structure will be required. Work activities also will require 0.63 ac of temporary construction access easements from adjacent private properties and Bureau of Reclamation parcels located outside of the existing Caltrans ROW. Equipment staging is proposed to occur at an existing pull-out just northwest of the bridge.

3) *Kaweah River Bridge* (Bridge Number 46-009) is located at PM 18.68 on SR 216, approximately 0.5 mi west of the intersection with SR 198 and north of the community of Lemon Cove. Caltrans proposes to remove all railings and replace them with concrete barriers; widen the structure by 12 ft. 2 inches on the north side only to increase its total width to 44 ft.; add five additional piers along the widened portion; widen the roadway approaches, including a segment of the western approach by 12 ft. north of the existing roadway; apply polyester/concrete overlay to the bridge deck; construct standard end treatments on the structure; realign the intersection of SR 216/Dry Creek Road further

west of the bridge, which may require rock excavation from the adjacent hillside; and relocate two utility poles.

New ROW (0.1 ac) acquired from privately owned land will be required to accommodate the proposed road realignments. Equipment staging is proposed to occur at an existing pullout near the southwest quadrant of the bridge. Access to the Kaweah River channel will be via a temporary road constructed along the north side of SR 216 within the northeast quadrant of the bridge.

Construction is anticipated to begin on August 15, 2016 and finish on June 24, 2019. Work may or may not be continuous over this approximately three year period. All three sites are expected to be concurrently under construction. No night work is anticipated for the bridge structure or roadway activities at any of the three sites.

The contractor will follow best management practices (BMPs) during construction. Dust control measures will be implemented as part of the project. Any imported fill material will come from an established borrow site.

Avoidance and Minimization Measures

Caltrans will implement measures to reduce the potential for adverse effects to the San Joaquin kit fox. The Service's most recent guidelines will be followed; currently, this is the January 2011 *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (Recommendations). Caltrans will conduct preconstruction surveys, as described on page two of the Recommendations; set up exclusion zones around any dens that are identified during preconstruction surveys, as described beginning on page three; and implement the construction and on-going operational requirements described beginning on page five. Provisions #2 and #3 below are modifications to existing measures in the Recommendations. Provision #1 is in addition to the Recommendations:

1. A Service-approved biologist(s) will be present on-site during initial ground-disturbing activities at all three bridge sites. To the extent possible, the biologist(s) will be available on-call during all construction periods when not present on-site.

2. Potential and atypical dens that are located at least 50 ft. from construction will be protected with a 50 ft. zone. Known dens that are located at least 100 ft. from construction will be protected with a 100 ft. zone. In instances where 50 ft. or 100 ft. exclusion zones cannot be maintained, potential and/or known dens will be monitored; once these dens are verified to be unoccupied, they will be temporarily blocked (via sandbagging or installation of a one-way door) for the duration of the project.

3. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed daily from the entire project site in order to reduce the potential for attracting predator species.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area covers all three bridge sites; each of the three bridge sites is composed of the project footprint (inclusive of existing and proposed ROW, staging areas, and proposed temporary construction easement/access

areas both within and outside of the ROW), which Caltrans defines as the area to be directly affected by construction; plus areas extending approximately 200 ft. from the edge of each footprint which will experience further-reaching effects of construction activities such as noise and visual disturbance.

Effects Analysis

Land at the Sand Creek Bridge site is primarily agricultural (orange orchards), with some ruderal areas along both the roadway and shoulders of the channel. Although the channel is usually dry (no water was observed during the 2013 project surveys), the intermittent flows that do exist are used to irrigate neighboring agricultural fields. Land at the Friant-Kern Canal site consists mainly of ruderal areas along the highway, the access roads, and the shoulders of multiple irrigation ditches. Agricultural land (orange orchards) is situated adjacent to the site footprint. The canal at this location flows continuously and its banks are actively maintained and cleaned. Land at the Kaweah River site consists of areas of riparian woodland, annual grassland, and ruderal land. Additional areas of grassland are situated adjacent to the site footprint. The river channel flows continuously.

No San Joaquin kit foxes or associated sign, such as dens, were observed at any of the three sites during general biological surveys conducted by Caltrans in 2013. According to the California Natural Diversity Database (CNDDB, 2014)[1], there are no records of the San Joaquin kit fox within the action area. However, there may be some limited potential for the San Joaquin kit fox to forage at each of the three bridge locations. The agricultural lands within and adjacent to the Sand Creek site footprint, as well as adjacent to the Friant-Kern site footprint provide potential, though impaired foraging habitat for the San Joaquin kit fox. Furthermore, signs of one of the San Joaquin kit fox's prey species, the California ground squirrel (*Otospermophilus beecheyi*), was found at the Sand Creek site. The areas of annual grassland identified both within and neighboring the Kaweah River site footprint provide higher-quality foraging habitat for the species; these areas may even provide potential denning habitat. It is therefore reasonably likely that the San Joaquin kit fox could move through each of these three locations.

There will be a permanent loss of approximately 0.62 ac of orange orchards identified as low-quality foraging habitat within the Sand Creek site footprint due to the realignment of the Road 116/SR 201 intersection. Since construction impacts at the Friant-Kern Canal and Kaweah River sites will be limited to predominantly ruderal areas located immediately adjacent to the existing roadways within each respective footprint, these effects are not expected to result in the permanent or temporary loss of suitable foraging habitat.

Determination

Given the relatively small-scale scope of work at each bridge location, the presence of low-quality foraging habitat located either within or adjacent to each site footprint, the minimal extent of permanent and temporary effects to habitat, the conservation measures proposed to minimize and avoid potential effects to the species, as well as there being no detections of the San Joaquin kit fox or its sign within the action area, Caltrans concludes that the project may affect, but is unlikely to adversely affect the San Joaquin kit fox and requests concurrence with its determination. After reviewing Caltrans' letter and BA, and engaging in further correspondence with Caltrans, the Service concurs that it is reasonably likely that any effects to the San Joaquin kit fox will be insignificant or discountable and that the action is not likely to adversely affect the species.

---

[1] California Natural Diversity Database. 2014. Natural Heritage Division, California Department of Fish and Wildlife. RareFind 5. Sacramento, California. Accessed July 22, 2014.

Conclusion

This concludes the Service's review of Caltrans' action to construct the Tulare Bridge Upgrade Project and the Service's consideration of the project's effects on the species. No further coordination with the Service under the Act is necessary at this time. Note that take of listed species is not exempted from the prohibitions described under section 9 of the Act. If conditions change so that the project may adversely affect listed species, initiation of formal consultation, as provided in 50 CFR § 402.14, is required.

If you have questions regarding this project, please contact Jen Schofield at (916) 414-6600.

Sincerely,

Thomas Leeman
Chief, San Joaquin Valley Division

cc:
Craig Bailey, California Department of Fish and Wildlife, Fresno, California

United States Department of the Interior

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

In Reply Refer to:
08ESMF00-
2014-I-0315

FEB 18 2015

Ms. Dena Gonzalez
Chief, Central Region Biology Branch
California Department of Transportation, District 6
855 M Street Suite 200
Fresno, California 93721

Subject: Revisions to the Informal Consultation for the Tulare Bridge Upgrade Project, Tulare County, California (California Department of Transportation 06-TUL-201-PM 12.48; 06-TUL-201-PM 21.21; 06-TUL-216-PM 18.69; EA 06-0H200)

Dear Ms. Gonzalez:

On August 20, 2014, the U.S. Fish and Wildlife Service (Service) concurred with the California Department of Transportation's (Caltrans) determination that its action to construct the Tulare Bridge Upgrade Project (project) in Tulare County, California may affect, but is not likely to adversely affect (NLAA) the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*) (Service file number 08ESMF00-2014-I-0315). This is the Service's response to Caltrans' October 16, 2014 letter (received in our office on October 22, 2014) regarding Caltrans' proposed changes to the Kaweah River Bridge project area (Site #3). In order to better accommodate the shift in the curvature of the existing highway approaches required by the widening of the Kaweah River Bridge, Caltrans proposes to expand its originally-identified project footprint, which will result in additional permanent effects to habitat. Caltrans has determined that these modifications to the Kaweah River site footprint are not likely to change its original NLAA determination for the San Joaquin kit fox; therefore, Caltrans requests concurrence from the Service with this conclusion.

On page 1 of the August 20, 2014 concurrence letter, the subject line is being modified as follows. Segments of removed text are shown by a strike-through line and new text is shown by an underline:

> Informal Consultation for the Tulare Bridge Upgrade Project, Tulare County, California (California Department of Transportation 06-TUL-201-PM 12.48; 06-TUL-201-PM 21.21; 06-TUL-216-PM ~~18.69~~ <u>18.436-19.065</u>; EA 06-0H200)

The following section supplements the information presented under the *Kaweah River Bridge* heading of the **Project Description** on pages 2-3 of the August 20, 2014 concurrence letter and pertains to Caltrans' proposed increase in the project footprint at the Kaweah River site:

> The new project footprint will extend beyond the originally-identified footprint by approximately 820 feet (ft.) to the west along State Route (SR) 216 and 1,435 ft. to the southeast along SR 216. The proposed right-of-way (ROW) boundary also will be shifted approximately 45 ft. to the north and northeast, parallel to the existing road alignment.

Ms. Dena Gonzalez

The following section supplements the information presented in the **Effects Analysis** on page 4 of the August 20, 2014 concurrence letter and pertains to Caltrans' proposed changes to the amount of permanently lost potential San Joaquin kit fox habitat at the Kaweah River site:

> Additional effects to potential San Joaquin kit fox habitat are expected to occur as a result of the realignment of the existing highway approaches at the Kaweah River site. The expanded project footprint includes part of an orange orchard to the west of the bridge, as well as ruderal grassland and bare highway shoulders to the west and southeast of the bridge. An additional 0.8 acre (ac) of orange orchard (original amount = 0 ac), and 2.12 ac of ruderal grassland and bare highway shoulders (original amount = 0.48 ac) will be lost as a result of the realignment. Of the additional amount of ruderal grassland and bare highway shoulders that will be impacted, 0.47 ac is located between the orchard and the junction of Dry Creek Drive on the western side of the bridge and will be lost due to the expansion of the ROW along the northern side of SR 216; and 1.65 ac are located to the southeast of the bridge and will be lost as a result of the construction of drainage channels along the new shoulders of the realigned highway approaches. A row of 23 cottonwood trees originally planted by the landowner southeast of the bridge, along with two small willow bushes, will need to be removed in order to realign the SR 216 approaches.
>
> Caltrans revisited the Kaweah River site on September 9, 2014 to evaluate the new project footprint. No San Joaquin kit foxes or associated sign such as dens, tracks, or scat were observed within or near the additional areas of the new footprint. However, burrows belonging to one of the San Joaquin kit fox's prey species, the California ground squirrel (*Otospermophilus beecheyi*), were observed, so there may be some limited potential for the San Joaquin kit fox to forage within these additional areas. Caltrans has concluded that the expansion of the project footprint and the resulting permanent loss of an additional total of 2.92 ac are not likely to adversely affect the San Joaquin kit fox given that the amount of habitat affected is minimal (i.e., restricted to narrow strips of land along the SR 216 traveled-way); contains no sign of occupancy by the species; and consists, in part, of land types considered to be generally less suitable for the species (i.e., orchard and bare highway shoulders). Even though ruderal grasslands comprise the main part of the expanded project footprint and are likely to provide suitable foraging habitat for the San Joaquin kit fox, the configuration of impacts to these grasslands in the form of long, narrow segments is unlikely to result in adverse effects to the San Joaquin kit fox over the extent of the project. Consequently, there is no expected increase in the level of take of the San Joaquin kit fox. The Service concurs with Caltrans' conclusion that its original NLAA determination remains unchanged.

Closing Statement

Caltrans' proposed modifications to the Kaweah River site footprint do not change the conclusion of our August 20, 2014, concurrence letter: the proposed project may affect, but is not likely to adversely affect the San Joaquin kit fox. No further coordination with the Service under section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*) is necessary at this time. This concludes the revision letter for the Tulare Bridge Upgrade Project.

Ms. Dena Gonzalez

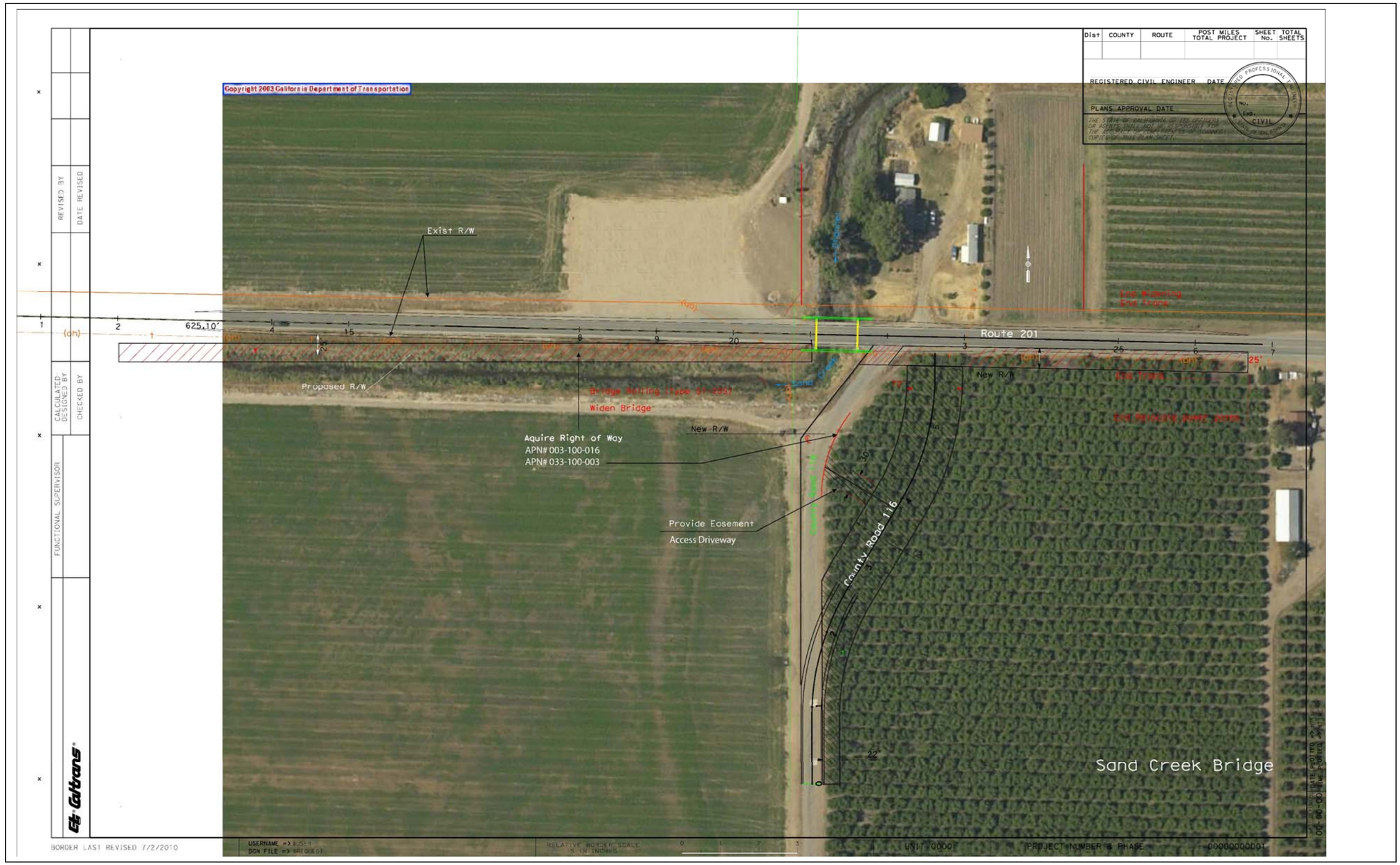
If you have any questions regarding this letter, please contact Jen Schofield, Wildlife Biologist, or me, at (916) 414-6600.

Sincerely,

Thomas Leeman
Chief, San Joaquin Valley Division

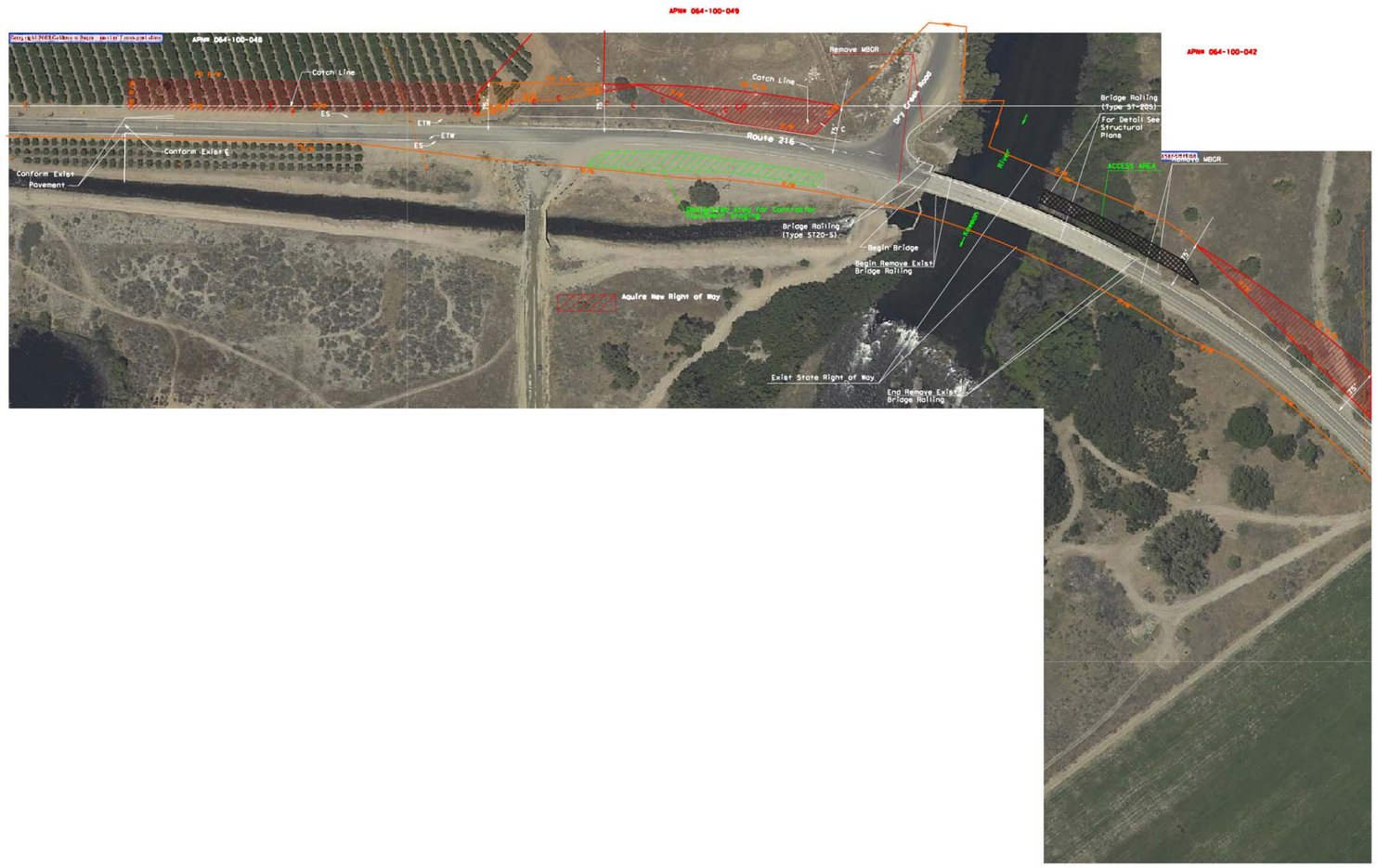
cc:
Craig Bailey, California Department of Fish and Wildlife, Fresno, California

Appendix L Preliminary Project Maps

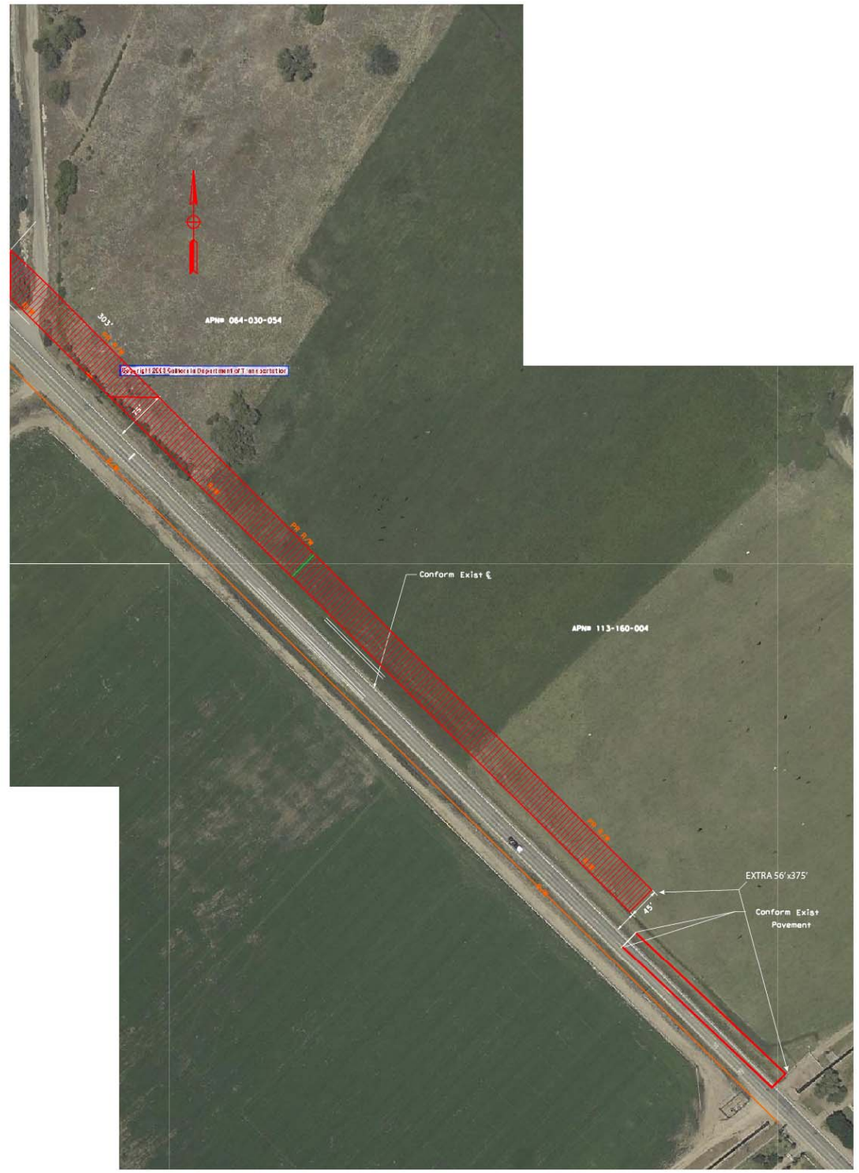


Sand Creek Bridge on State Route 201

Friant-Kern Canal Bridge on State Route 201



Kaweah River Bridge on State Route 216



Kaweah River Bridge on State Route 216

Technical Studies that are Bound Separately

Cultural Resources Studies (not available to the public)

- Historic Property Survey Report
- Supplemental Historic Property Survey Report
- Historical Resource Evaluation Report
- Archaeological Survey Report
- Supplemental Archaeological Survey Report.

Scenic Resource Evaluation and Visual Impact Assessment Memo

Water Quality Assessment

Location Hydraulic Study

Paleontological Identification Report Scoping Memo

Hazardous Waste Report (Preliminary Site Investigation)

Air Quality Memo; Air, Noise and Water Scoping Memo

Natural Environment Study

Section 4(f) de minimis Determination for the Friant-Kern Canal